MIDWEST MARKETING ISSUE
Pages 9-16

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TVA Traces Growth Of Bulk Blending Plants in Illinois

Blenders Distribute 26% of All Straight Materials in State

KNOXVILLE — Bulk blending of fertilizers is described in a publication issued Nov. 5 by Tennessee Valley Authority. The survey on which it is based was made in Illinois by Billy J. Bond, Department of Agricultural Economics, University of Illinois, and Harold G. Walkup, Agricultural Economics Branch, TVA.

During the last 10 years, fertilizer bulk blending has evolved out of the needs of a fast growing industry, the report states. Bulk blending includes nonchemical mixing and bulk handling of straight fertilizer materials. By storing at least three straight fertilizer materials—one for nitrogen, a second for phosphorus and a third for potash—a plant operator can mix any ratio a farmer wants. The marketing method combines in one agency the usual functions of mixing and the wholesaling and retailing of

(Turn to BULK BLENDING, page 17)

Arizona Fertilizers, Inc., Completes Construction Of Emulsifier Plant

PHOENIX, ARIZ.—Arizona Fertilizers Inc., Phoenix, has completed construction of a $50,000 emulsifier plant for the blending of liquid insecticides at its Yuma, Ariz., branch. Machinery in the new 5,000 sq. ft. plant has a production capacity of about 1,000 gal. per hour and storage facilities for about 10,000 gal.

Four bulk storage tanks will be used to store the basic chemicals used in the blending operations until they are ready for use. The emulsifying kettle, used in the blending operations, will hold nearly 500 gal.

The Yuma branch also has facilities for blending dust insecticides and for the manufacture of dust repellents and fertilizers.

Potash Deliveries Show Gain During First Nine Months

WASHINGTON—Deliveries of potash for agricultural purposes in the U.S., Canada, Cuba, Puerto Rico and Hawaii by the eight principal American producers and the importers totaled 2,663,762 tons of salts containing an equivalent of 1,565,148 tons K_2O during the first nine months of 1958, according to the American Potash Institute. This was an increase of 3% in salts and K_2O over the same period in 1957.

Continental U.S. took 1,488,443 tons K_2O, Canada, 43,292 tons, Cuba, 8,780 tons, Puerto Rico, 13,048 tons, and Hawaii, 11,585 tons K_2O. These figures include imports of 97,310 tons K_2O for only the first six months of the year. Exports to other countries were 181,061 tons K_2O.

Deliveries of potash for non-agricultural purposes amounted to 81,113 tons K_2O, a decrease of 15% under last year. Total deliveries for all purposes were 3,098,456 tons of salts containing an equivalent of 1,827,322 tons K_2O, an increase of 2% in salts and K_2O.

During the third quarter of 1958, deliveries for agricultural purposes were 404,550 tons K_2O in Continental U.S., 8,634 tons in Canada, 3,620 tons in Cuba, 1,942 tons in Puerto Rico, and 4,791 tons in Hawaii making a total of 423,537 tons K_2O, an increase of 27% over last year. Import figures for the third quarter of the calendar year are not available at this time. Exports of potash to other countries during the third quarter were 69,306 tons K_2O, an increase of 40% over last year.

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300 Study Technical Problems at Fertilizer Industry Round Table

By LAWRENCE A. LONG
Editor of Croplife

WASHINGTON — More than 300 representatives of the fertilizer manufacturing industry heard thoroughgoing discussions on production technology, equipment, and the economics of preventive maintenance during the first day of a scheduled three-day fertilizer industry round table at the Mayflower Hotel here Nov. 5. The attendants, hailing from wide sections of the U.S., Canada, Holland and China, sat through the lengthy sessions with attentive ears and well-filled notebooks.

Dr. Vincent Sauchelli, chemical technologist of the National Plant Food Institute and chairman of the Round Table, presided at the opening session, introducing the subsequent speakers and acting as moderator in question-and-answer periods.

Stressing the factors involved in the economics of preventive maintenance, speakers covered the subject completely, ranging from checking the wear of bearings to discussing delicate gauges and meters used in manufacturing.

Jesse C. Jessen, E. I. duPont de Nemours & Co., Inc., Wilmington, Del., talking on the economics of preventive maintenance and equipment replacement, said that the reduction of maintenance costs is a must, particularly in plants where complex processes are used. He declared that as plants become more complex, the attention paid to maintenance grows, and in the case of duPont, he said, the number of employees on maintenance payrolls has increased some 270% since 1940.

The speaker denied the argument that machines put men out of work, pointing out that in 1850, manpower contributed 23% to production, whereas in 1960, the figure is expected to be only 3%. Over the same period, machine production will increase from 26% in 1950 to 96% in 1960; and animal power will be reduced from 51% in 1850 to 1% in 1960. With the machine comes maintenance problems, Mr. Jessen reminded,

(Turn to ROUNDTABLE, page 4)

August Super Output Below That of Year Ago

WASHINGTON—Production of superphosphate and other phosphatic materials during August totaled 148,589 short tons, compared with 172,837 short tons in August, 1957, the Bureau of the Census reports. Shipments in August amounted to 114,013 short tons, compared with 119,314 short tons in August, 1957, and stocks on hand at the end of last August totaled 366,542 short tons, a gain from 324,846 short tons a year earlier.

August production included 74,422 short tons of normal and enriched, 55,590 short tons of concentrated, 12,698 short tons of ammonium phosphates and 5,879 short tons of other phosphatic fertilizers, including wet-base goods.

More Education, Merchandising Key To Optimum Sales

ATLANTA, GA.—A description of the program conducted by the National Plant Food Institute in the Southeast, a talk on the merits of soil testing, and a panel discussion on a soil fertility program carried on with farmers in two North Carolina counties comprised a large portion of the Southeastern Fertilizer Conference held at the Biltmore Hotel here Oct. 29-30. In addition, a talk on merchandising as a key to success in business was featured on the opening morning's program.

Presiding at the meeting of Oct. 29 was J. H. Epting, Epting Distributing Co., Leesville, S.C.

Dr. Russell Coleman, executive vice president of NPFI, Washington, D.C., told the assembly about the program carried on in the Southeast, indicating that there is still a broad educational effort necessary before optimum use of fertilizer materials may be realized in that area.

Following up the remarks of Dr. Coleman, Dr. E. L. Beacher, regional director for the Institute, discussed

(Turn to SOUTHEASTERN, page 30)

NO QUICK SOLUTIONS, NAC TOLD

New Farm World Has Many of Same Old Problems

SAVANNAH, GA.—"There are no short-cuts, push-buttons or ready-to-wear solutions" to the problems of the agricultural chemical industry, Frank S. Washburn, general manager of the Agricultural Division, American Cyanamid Co., New York, declared at the closing session of the 25th anniversary meeting of the National Agricultural Chemicals Assn. here Oct. 31.

(Earlier sessions of this meeting were reported beginning on page 1 of the November 3 issue of Croplife.)

Mr. Washburn said that the agricultural economy has been subjected to tremendous changes, and that there have been shifts, differences in outlook and an almost phenomenal expansion during the 25 year history of the association.

He warned, however, that this does not constitute "an entirely bright new world equipped with a new set of rules and a new cast of characters." Many of the same old problems which were with us 25 years ago exist today, he said. Any change in attitude and method must take into account the cultural and economic lag that is always present from one extreme in agriculture to the other.

He said that there is a dangerous trend in many areas of American

(Turn to NAC MEETING, page 6)

Proper Use of Insecticides, Soil Tests Get Boost at Rutgers Grassland Meeting

NEW BRUNSWICK, N.J.—Taking the long view of grassland farming, Rutgers University dairy scientists have begun to look into the related subjects of cow appetite and inherited capacity to eat roughage.

Dr. Robert E. Mather of the university's Dairy Research Farm, Beemerville, said at the annual Rutgers Grassland Farming Conference Oct. 28, that improved methods of producing grassland crops are not of much value without animals to eat the increased and improved crops.

These animals must be intermediate between the field and the human consumer, and so more attention must be paid to the animal part of the program, he said.

Judging by the trend, it appears that the time is not far off when all of New Jersey's forage acreage will be planted with highly bred, superior type forages, Dr. Warren R. Battle, crops researcher at Rutgers, told the conference.

The widespread acceptance of improved varieties has been one of the most striking changes in agricultural practice in recent years. For example, said Dr. Battle, common types of alfalfa have almost dropped out of the picture. This year nearly 70% of all alfalfa in the state was planted with a single variety, Atlantic, which was bred in New Jersey and is particularly well adapted.

Another speaker, Dr. Robert W. Duell, also a crops researcher, put in a word for annual forages, which he praised for their versatility and extension of the forage production into seasons when perennial forages fall off in production.

Dr. Duell saw a bright future for hybrid forage sorghums predicting their replacement of hybrid corn in certain areas of New Jersey.

"The time has come when a farmer no longer can afford to lime and fertilize his soil for the production of crops solely on the basis of costly experience or according to what his neighbor is doing."

Dr. Roy L. Flannery of the soils department made this assertion before explaining how a soil test can remove uncertainties. He said the experiment station is making 25 different fertilizer recommendations based on the existing fertility level of the soil for alfalfa and about 40 other crops.

All insect enemies of forage crops can be controlled by timely applications of the proper insecticides, said Robert S. Filmer, Rutgers entomologist. He stressed the need for careful timing of insecticide applications and since timing is usually based on a knowledge of the life history of the insect, he reviewed some points in the life histories of important forage insect enemies in New Jersey—pea aphid, spittle bug and alfalfa weevil.

Dr. George W. Vander Noot, head of the animal husbandry department, reported on the digestibility by sheep of grasses grown at differing levels of nitrogen fertilization. He found, he said, that increased levels of nitrogen increased the crude protein content of orchard, brome and reed canary grass hay. Also, the sheep were capable of utilizing the extra protein made available by the additional nitrogen.

California Chemical Employment Holds Steady

SAN FRANCISCO — Employment in chemical manufacturing industries held at an even 38,000 wage and salary workers between August and September, reports the Division of Labor Statistics and Research of the California State Department of Industrial Relations.

Earnings among the production worker segment were also relatively unchanged between the two months this year, rising fractionally from an estimated average of $104.23 to $104.98 per week, and holding at an estimated average of $2.51 per hour. The increase reflected a small rise in the length of the average work week, from 41.5 to 41.7 hours. The corresponding figures for September, 1957, were $100.79, and $2.42, and 41.7 hours.

KENTUCKY FERTILIZER REPORT

LEXINGTON, KY. — Fertilizer sales in Kentucky during August were 10,302 tons or just 87 tons less than August, 1957, reported the Kentucky Department of Feed & Fertilizer. Mixed fertilizer sales amounted to 6,971 tons or 121 tons more than August of last year. Most popular grade was 5-20-20 with 1,117 tons. Material sales totaled 3,331 tons or 208 tons less than last year. Most popular material was ammonium nitrate with 911 tons.

Start Plans for New Agriculture Building

TRENTON, N.J. — Preliminary plans are being prepared for a proposed new building to house the state Department of Agriculture, announced Phillip Alampi, secretary of agriculture. The action was taken in accordance with instructions from the state Board of Agriculture and after consultation with state officials.

Mr. Alampi pointed out that the Department of Agriculture has occupied the same quarters on the sixth floor of a bank building in downtown Trenton since 1930. During this period the staff, including that of the Office of Milk Industry, has increased from 78 to 190, but additional space has not been provided to meet the needs of the increased employees. He added that the services and functions assigned to the department have also been greatly expanded, and that poor working conditions make it difficult to maintain a high standard of performance.

Moreover, Mr. Alampi continued, the department's present location is inaccessible to farmers of the state who wish to avail themselves of its laboratory and other services. Most desirable, he said, would be a site on the outskirts of the city which could be easily reached by farmers and where there would be ample provision for parking.

A particularly bad situation exists in the department laboratories, Mr. Alampi stated. The animal disease control laboratory operates with improvised equipment, is located in the "attic" of the bank building and lacks elevator service. The plant industry laboratory is located in temporary headquarters on the outskirts of Trenton, separated by several miles from the rest of the department. The building now housing the laboratory is the department's garage.

"The facilities now used by both the animal disease and plant pest control laboratories leave almost everything to be desired in the way of proper housing for laboratory test equipment," Mr. Alampi concluded. "Our department could greatly improve its services to the farmers and other citizens of New Jersey, if modern offices and up-to-date laboratory facilities were available to it."

Okay Insecticide Label

NEW YORK—Approval by Canadian agricultural authorities of a commercial label covering use of new Sevin insecticide for control of insects attacking apples and pears has been announced by Dr. R. H. Wellman, manager, Crag Agricultural Chemicals, Union Carbide Chemicals Co., division of Union Carbide Corp.

Far West Accident School for Fertilizer Personnel Planned

WASHINGTON — The Far West accident prevention school for fertilizer plant supervisory personnel will be held at the Hacienda Motel, Fresno, Cal., Dec. 2-3, announced Paul T. Truitt, executive vice president of the National Plant Food Institute.

This is the fifth school held in this series in the U.S. this year and is sponsored by the fertilizer section of the National Safety Council and the institute.

Presiding and director for the school is O. J. Chinnock of Hercules Powder Co.

The program for the school follows:

Tuesday, Dec. 2, 8:30-9 a.m., school registration; 9 a.m.-9:15 a.m., introductions and purpose of school, W. C. (Billy) Creel, chairman, supervisory training committee, National Safety Council, and safety director, North Carolina Department of Labor; 9:15-10 a.m., Fundamentals of Accident Prevention, A. C. Blackman, chief, division of industrial safety, state of California, San Francisco. Starting at 10-10:45 a.m., the Foreman's Safety Job for All Line Management and Supervisory People, John E. Smith, director of safety, Spencer Chemical Co.; 10:45-11 a.m., recess; 11-11:45 a.m., Personal Factors in Safety, Kirk Collins, safety consultant, city of Oakland; 11:45-1 p.m., lunch.

Starting at 1-1:30 p.m., School Participation: Problems We Would Like to Have Solved, moderator: John E. Smith; 1:30-2:30 p.m., each group will be assigned a problem submitted by a different group. They will be allowed time for consideration and will then report their recommended solution; 2:30-2:45 p.m., recess; 2:45-3:30 p.m., Discovering Accident Hazards, W. C. Creel, safety director, Department of Labor, state of North Carolina; 3:30-4 p.m., Meaning of Accident Prevention to the Insured, J. A. Sketchley, Workman's Compensation Insurance Fund, San Francisco; 4-4:30 p.m., Summary and discussion of the day's work.

At 6:30 p.m., banquet (15-minute speaker)—A. C. Blackman, chief of division of industrial safety, state of California, San Francisco.

Wednesday, Dec. 3, 9-9:45 a.m., Teaching Job Skills—Teaching Safety, John E. Smith, safety director, Spencer Chemical Co.; 9:45-10:30 a.m., Material Handling Problems of the Fertilizer Industry, G. Mustaparta, safety supervisor, Hercules Powder Co., Hercules, Cal.; 10:30-10:45 a.m., recess; 10:45-11:05 a.m., 11:05-11:30 a.m., Importance of Safety Training to the Local Fertilizer Mixers, Fred Duker, staff safety supervisor, Stauffer Chemical Co., San Francisco, and Dr. G. F. MacLeod, technical vice president, Sunland Industries, Inc., Fresno, Cal.; 11:30-1 p.m., lunch.

At 1-2:15 p.m., Panel discussion (10 minutes per speaker) Safe Handling of Liquid Fertilizers, Transportation, Rumbley Transportation Co., Fresno; Regulations, Dr. C. W. Bahme, deputy chief, personnel and training, Los Angeles Fire Department; Loading and Unloading, Don Wood, safety supervisor, Shell Chemical Corp., Pittsburgh; Storage and Use, J. B. Sturgess, sales engineer, Collier Carbon & Chemical Co., Los Angeles; Safety Equipment, K. S. Butler, district manager, Mine Safety Appliance Co., San Francisco; Summary by moderator, Calvin Dorough, superintendent, fertilizer-plant food section, California Spray-Chemical Corp., Richmond; discussion; 2:15-2:30 p.m., recess.

Starting at 2:30-3 p.m., Safety Measures Necessary in Handling of Fertilizers Containing Pesticides, R. Z. Rollins, chief, bureau of chemistry, Department of Agriculture, state of California; 3 p.m., Summary and discussion of unanswered questions. Unfinished business and presentation of school certificates, O. J. Chinnock.

Ralph L. Brant

Ralph L. Brant Appointed Sunland's General Manager

FRESNO, CAL.—Ralph L. Brant, former vice president and assistant general manager, has been elevated to the position of general manager of Sunland Industries, Inc. of Fresno. His appointment was announced by Beverly H. Jones, chairman of the board. Mr. Brant succeeds the late Frank A. Easton.

Joining Sunland in 1942, Mr. Brant has served in the capacities of purchasing agent, assistant general manager and was made vice president and assistant general manager in 1957.

Simultaneously with the above announcement, Henry E. Dunklau was named by Mr. Brant to assume new duties as purchasing agent. He formerly was an assistant in the department.

Monsanto Cuts Prices Of Two Insecticides

ST. LOUIS—The Monsanto Chemical Co. announced Oct. 30 a reduction in its quantity prices on two phosphate insecticides, Niran (ethyl parathion) and methyl parathion, to 84¢ lb. for reductions of 38% and 25%, respectively.

The new price level, effective immediately, is 52¢ below the previous $1.36 lb. price of Niran and 28¢ below the previous $1.12 lb. price of methyl parathion.

James W. Starrett, manager of agricultural chemicals sales for Monsanto's Organic Chemicals Division, said that the price cuts were made to broaden markets and obtain substantially larger sales volume in both products.

"Process advantages and large volume economies in our new, expanded plant now permit us to price these products at levels which should greatly expand their sales," Mr. Starrett said. "We are assured of reasonable profits from predicted sales volumes at these new prices."

Monsanto's new plant for Niran and methyl parathion, on stream since last January, is reported to be the nation's largest with capacity far exceeding that of other domestic producers. It supplanted Nitro, W.Va., facilities destroyed by an April, 1957, explosion.

The expanding use of methyl parathion also was credited by Mr. Starrett with a part in the price cut. Introduced commercially in 1955, its 1958 sales are estimated at 4½ million pounds, most of this on cotton.

Pesticide Dealers' Meeting

NEW BRUNSWICK, N.J. — The Rutgers' Annual Pesticide Dealers' Conference will be held on Nov. 20 at Rutgers University Commons here.

The latest research results will be presented and copies of the advance recommendations for 1959 will be available to those in attendance.

Fertilization Trial Results Help Boost Interest in California County

SAN FRANCISCO — Some 1,500 acres of Glenn County rangeland were fertilized last year with good reason and with good results, reported Monte Bell, Glenn County farm advisor.

Interest in range fertilization was boosted by the results of a 4-year large-scale range fertilization trial conducted by the agricultural extension service in cooperation with the late J. W. Sevier, Willows rancher. The summary of the every-other-year application of 50-70 lb. nitrogen and 20-25 lb. P_2O_5 per acre showed the following:

	Control	Carry-over	Fertilized
Average lb. beef/acre/season	26.9	46.9	93.9
Average over control	...	174%	351%

Each pound of actual fertilizer produced 1.14 lb. of beef.

"It's getting late," reminded Mr. Bell, "to plan your range fertilizer program for the coming season. One of the most important advantages of fertilizing ranges is to produce early feed. Naturally this can be done only if the fertilizer has been applied early. The only loss you would expect by applying fertilizer early is the possibility of high wind blowing the fertilizer off the ridges. In most cases, however, where there is any residual grass growth, there will be no loss of fertilizer nutrients by weathering. Fertilizing early catches the first rains and doesn't interfere with sowing barley or other fall-planted crops."

"The only way to get maximum returns from fertilized range is to utilize it fully and fertilize for a definite purpose," said Mr. Bell. "It is better to fertilize a small area with fairly heavy amounts than to spread it too thin over a large area. The fertilized portion of a field will act as a fence and livestock will concentrate their grazing in the fertilized area. While the stock is grazing on this more palatable, more nutritious early feed, the unfertilized portion of the field has a chance to get a good start."

According to Mr. Bell, results of plots and observations have shown that on most Glenn County range soils nitrogen and sulfur are the elements which give the most economical response. Two hundred fifty pounds of ammonium sulfate per acre is the general recommendation. For specific recommendations, consult your farm advisor.

Last year's results on the small fenced range fertilization plots on the Drew-Spurlock range on either side of the Elk Creek road west of Fruto showed a significant response to nitrogen, phosphorus and sulfur on both the Sehorn soil south of the road and the Millsholm soil north of the road. The striking change in type of growth could be seen from the road. Where phosphorus and sulfur were applied, there was 60-90% bur clover compared to 14-30% on the check, whereas the nitrogen combinations decreased the percent clover.

High rates of the fertilizers were used so that if there was any deficiency it would be sure to show up. On both soils, nitrogen was applied at 150 lb. to the acre, phosphorus 200 lb., and sulfur 100 lb. On the Millsholm soil, a phosphorus-sulfur application increased the dry feed over the check plot 214%, the nitrogen-sulfur increased the yield 400%, and the nitrogen-phosphorus-sulfur treatment increased the yield 463%. The check plot yielded an estimated 1,300 lb. of dry matter. On the Sehorn soil, the phosphorus-sulphur combination increased the yield 215%, the nitrogen-sulphur combination increased it 246%, and the nitrogen-phosphorus-sulphur combination increased it 290%. The check area yielded an estimated 2,200 lb. of dry matter.

"It is important to remember," concluded Mr. Bell, "that the past year was an exceptionally good one, especially for bur clover, and that results will vary from year to year. These plots will be continued in 1959."

Atlas Appointment

WILMINGTON, DEL. — The appointment of Arthur F. Quinlan as assistant regional manager of Atlas Powder Co.'s chemical sales office in Chicago was announced by Edward J. Massaglia, vice president and general manager of the company's chemicals division. The Chicago office, of which Howard W. Dellard is manager, is headquarters for Atlas' chemical sales in all or parts of 25 states.

Mr. Quinlan joined Atlas shortly after receiving his bachelor's degree in chemistry from Lafayette College in 1950 and was most recently employed in the company's New York chemical sales office. He is a native of Pembroke Dock, Wales.

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Cut your in-the-field costs with this simple to operate, easy to maintain spreader. Merely set the feedgate opening, start the truck, engage the PTO and start spreading! Material is delivered to the twin spinners over a wide 24" conveyor. Also available with a center dump for stock piling and windrowing.

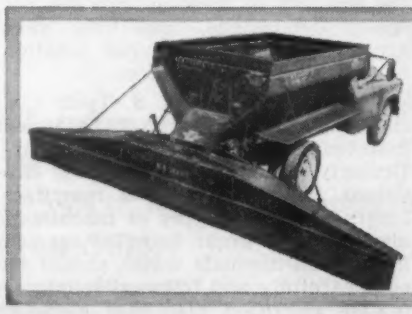
NEW LEADER *Engine-driven* Spreaders: Model L-52S with 24" conveyor is built for widespread use. Model L-62S with a 30" conveyor is for extra heavy, widespread lime applications. Both spreaders can also be used for fertilizer.

Accurately Blends and Spreads Three Fertilizers At The Same Time!

Now, offer mixed analyses at low, bulk rates!

Three separate feedgates, each with a test box for accurate metering, control the amount of spread. The driver can change the fertilizer ratio for varying soil conditions while in the field! Now, you can spread 3 kinds of fertilizer in one pass through the field . . . whereas, before it took 3 separate trips to do the job! A 7 h.p. gasoline engine drives the twin spinners at a constant rate, regardless of truck speed. The 36" belt-over-chain conveyor is powered from a drive-shaft drive synchronized to truck speed . . . for precise per-acre requirements. Optional equipment meters herbicides and insecticides into the fertilizer . . . spreads all three at once.

A *Powered Flow-Divider* assures even distribution of materials to both spinners, regardless of the position of the L-42S on hillsides or level ground. Customers appreciate this feature as it results in an even crop growth throughout the field.



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The Week in WASHINGTON

By JOHN CIPPERLY, Croplife Washington Correspondent

Despite Democratic Win, No New Farm Legislation Expected in Next Two Years

WASHINGTON — Picking up and piecing together the splinters of the administration election campaign state by state discloses, first, that losses by the GOP in the Farm Belt must be attributed to activity on the part of big labor in those areas and, second, that the election of some 47 new Democratic congressmen and 13 senators will certainly not mean new farm legislation for the next two years.

The administration defeat in the election cannot, in a major way, be attributed to Ezra Taft Benson, secretary of agriculture, it is asserted here, even in some Democratic circles.

Farm income conditions in selected states of the Farm Belt where there have been defections from the normal Republican stronghold would not justify the desertion of the farmers from their previous and historic preference for GOP.

Using Nebraska as a prime example of farm income, official data shows that in that state farmers have obtained the highest gross farm income on record for the first 7 months of this year with cattle and hogs the top income producing commodities. They represent 60% of the cash income from farms in that state.

Wheat farming which reflects 15% of the farm income is up 15% this year reflecting the highest wheat yields on record.

It has been reported to Croplife from substantial wheat farm sources in Nebraska that individual farmers are holding in their own storage facilities as much as 100,000 bu. of penalty wheat which they do not intend to market this year, preferring to hold it back for other years as a crop insurance venture on their own account.

Minnesota, where veteran Republican senator Edward Thye was caught in a Democratic trend, represented a farm area where under the Benson policies, farm income is up this year by 4% again the highest on record. Cattle, hogs and dairy commodities represent equally 20% of the total farm income from the state. Sen. Thye never espoused the Benson farm philosophy, and it seems hard to believe that the Benson "burden" can be charged to his defeat.

Administration congressional losses in Indiana can hardly be charged to Mr. Benson. All major farm commodity prices for that state were pushing to peak levels prior to election.

For the agricultural chemical industry it would be unwise to accept superficial judgment on the election returns, considering it a repudiation of Mr. Benson's policies and meaning that the incoming congress with its large majorities in both chambers will mean an abrupt reversal of the Benson farm philosophy.

On the contrary, substantial opinion here sees in the preponderant Democratic majorities in both chambers an impasse in farm legislation—in fact, a stale-mate in any farm action.

This election will prove to be meaningless as far as new farm legislation is concerned, and dealers and suppliers in the farm community would be wise, according to post-election opinion, to hew to the line of aggressive merchandising of agricultural commodities and ignore the overtones of what is erroneously described as a political upheaval.

★ ★ ★

Election Results May Cloud Corn Price Supports

WASHINGTON — Last week's election returns may further cloud up the future of corn price support in the U.S.

For the next corn crop approximately 85% of all corn produced in the nation will be supported at higher price levels than those which prevailed for the 1958 crop.

In the 1958 crop year only 15% of the corn produced in the commercial Corn Belt complied with acreage allotments and had available support at the top level of a national average of $1.36 bu. In the non-commercial Corn Belt the corn farmer obtained support at 75% of the complier's price support level or approximately $1.03 bu.

At the same time the non-compliers in the commercial Corn Belt got a price support level of $1.06 bu.

The fiction which has been given wide currency is that Secy. Benson has lowered the level of price support for corn—particularly if the corn acreage allotment referendum is beaten in the up-coming vote on Nov. 25.

Such reports are false and should be so considered by the entire chemical industry.

In the old commercial Corn Belt, if the acreage allotment is defeated, it will mean that all corn farmers will obtain next year under previously announced decisions of the U.S. Department of Agriculture price support at not less than $1.14 bu., which is about 8¢ bu. more than was available to the big majority in 1958.

For the outside corn production from the commercial Corn Belt it will mean an increase of about 12-14¢ bu. national average basis.

What has been badly misunderstood about the new Farm Bill passed at the closing session of the 85th Congress is that the national corn crop will on the whole be price supported at a substantially higher dollars and cents level than in 1958.

Midwest farmers recently available here to Croplife predict that the 1959 corn crop, weather permitting, will exceed 4 billion bushels because of the attraction of the new price support levels.

This election solved nothing in the farm problem. There is no likelihood that the heavily Democratic incoming congress will make any changes in the law passed this year.

What's New ?

See Page 10

ROUNDTABLE

(Continued from page 1)

and the problem is how to cope with the management of repairs, replacements, and maintenance.

He said that an adequate maintenance organization must be set up, a work order system established, and equipment records kept accurately. Complete records on each machine are necessary, he said, when it comes to determining future overhauls, or replacement decisions. With such records a permanent check is made on all equipment.

A good maintenance foreman, he said, will plan jobs to be done the next day, the next week and the next month so there will be no delay in assigning work duties to a crew. Under such circumstances, unexpected breakdowns are held to a minimum and costly delays are often avoided by keeping machines in good condition at all times.

The policy of working on all machines at once was emphasized by Mr. Jessen who pointed out that it is management's responsibility to plan when machines are to be stopped for repairs or maintenance, rather than for the machines to be breaking down unexpectedly at peak seasons and causing great losses of production and tonnage.

His company trains mechanics to handle particularly difficult maintenance work, he reported. He showed photos of classrooms where employees are taught the inner workings of important and expensive machines, and the "why" of maintenance as well as the "how". He added that the safety record of men so trained is extremely good. "These men are ten times safer workers than are the others," he observed.

Efficiency also climbs as a result of such training. Company records indicate an increase in man efficiency from 52% to 63%, he reported, and added that this means fewer men are needed to do a given job. "Engineered maintenance" has brought measurable good results, he declared.

Four speakers discussed the problem of a formula for balance between maintenance, labor costs and equipment replacement. Representing companies supplying equipment for the fertilizer industry, the four wrestled with the means of determining the lowest possible cost of machinery consistent with satisfactory production performance. R. E. Robinson, Atlanta Utility Co., East Point, Ga., said that finding a formula for balance involves knowledge of how much the daily cleanup of a machine costs and how much a breakdown costs when it happens in a busy season. The speaker said that the answers to these queries are not easily determined, and may vary greatly with geographical location and other variable factors.

Wayne W. King, W. S. Tyler Co., Baltimore, Md., declared that planned maintenance pays big dividends, particularly when granulation is involved. He reminded that manufacturers of various types of machinery always go to great pains to furnish instruction manuals which should be read carefully and followed religiously. He reminded also that climatic factors and the production cost per ton of fertilizer dictate some of the answers to knotty questions about new equipment vs. the overhauling of old. In any case, however, he declared, good maintenance of any equipment is the key to success in fertilizer manufacturing.

Allan S. Jackson, Fertilizer Equipment Sales Corp., Atlanta, advised the use of simple file card indexes for each piece of equipment. Information on each machine should include the date it was purchased, its maintenance record, its serial number, and the amount of money spent over the years in keeping it going. Thus, an index on its operating efficiency is established.

Mr. Jackson emphasized the necessity of keeping the records simple. "Don't get them so complex that they are hard to keep," he warned.

Walter J. Sackett, A. J. Sackett & Sons Co., Baltimore, told the round table group that management faces great responsibility in the selection of equipment for fertilizer manufacture, particularly granular materials. He urged that all possible information on maintenance and costs of equipment be obtained before purchases are made. One of the objectives is to keep machines running over a long period of time without breakdown.

The cost of breakdowns is potentially tremendous, he said. Such stoppages, coming at peak production times, can make customers go elsewhere permanently, and the tonnage lost under such circumstances may never be regained.

An afternoon session continued the discussions, replying with a resounding "yes" to the question: "Will the cost of a good preventive maintenance program be justified when it produces a minimum amount of down time?"

Speakers indicated that many steps are necessary to prolong the period between breakdowns. These include cleaning, painting and lubricating, plus thorough periodic inspections. That labor costs are much too great to allow a crew to stand by for several hours while repairs are being made was emphasized. Another factor pointed out is that continuous processing cannot tolerate any sort of stoppage without serious results. "There is no such thing as a 'small' breakdown," one speaker observed.

All plants should have replacement parts at hand for immediate use in the event of a breakdown, the speakers asserted. One incident was described in which an elevator part broke, causing an 18-hour delay. Plant management figured the cost at some $300 an hour, or a loss of $5,000 because of a $50 spare part. "Keeping such parts on hand is an absolute must," it was pointed out.

Sam E. Shelby, Federal Chemical Co., Louisville, Ky., said that a program of inspection, correction, and organizing a good team to carry out such duties is a method of saving time, labor, and cash. The three key people in such a program, he said, are the operator, the mechanic and the plant manager, all of whom keep close watch on the day-by-day operation of equipment. Any suspected danger point is taken care of by the crew and breakdowns are held to a minimum.

In addition to lost tonnage and disgruntled customers, downtime also damages the product itself, Mr. Shelby declared. Because of the haste with which repairs are made under pressure, mistakes are likely, and further damage may result. Good housekeeping and a coordinated program are a prime factor for management, he said.

W. E. Schaffnit, Stedman Foundry & Machine Co., Aurora, Ind., declared that without a coordinated program, many plants fail to prevent breakdowns. Preventive maintenance, he said, comprises good housekeeping, replacement of machine parts before they break down, and a regular program of cleanup, greasing and general inspection.

"In 80% of the fertilizer plants, manufacturers' charts on how to take care of machinery, are not heeded," Mr. Schaffnit said. He added that operators are "asking for trouble" when they allow dust to work into bearings, and likewise, when they overgrease bearings.

Equipment like elevator chains should be inspected to determine wear and to replace weak links before they actually fail. Records should be kept so the management will know about when to replace such pieces.

That dust-collecting equipment will

(Turn to ROUNDTABLE, page 8)

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SALES MEETING—Key sales people from the agricultural division, American Cyanamid Co. are meeting during the months of October and November to discuss the company's expanded programs designed to serve all agriculture. These meetings highlight over-all, long-range objectives aimed at increasing farm income. B. F. Bowman, director of marketing, in a speech on the present and future of agriculture, predicted still greater growth opportunities in all fields. He believed the present strong demand for food and other agricultural products will continue as our population and national income continue to increase. In the face of limited farm acreage, continued improvement in yields per acre are required to insure adequate supplies of agricultural products. This will necessitate increased use of fertilizers, pesticides and other farm chemicals.

Grace Releases Experimental Quantities of New Insecticide

BALTIMORE—Experimental quantities of "Dri-Die" insecticide have been released by W. R. Grace & Co., Davison Chemical Div., for evaluation by members of the National Pest Control Assn. and state and federal agricultural departments.

This announcement was made in a panel discussion at a Washington, D.C., meeting of the NPCA, recently.

The material is a treated silica aerogel, a fine (micron-sized) white powder derived by processing from sodium silicate and sulphuric acid. It has been shown to be effective in extensive tests on roaches and wood termites and has shown promise in limited tests on houseflies, mosquitoes, ants, fleas, ticks and other insects, the company said. It acts by attacking the essential waxy coating which protects the body moisture of insects.

Favorable reports have been made as a consequence of research at the University of California at Los Angeles and other institutions, but the company emphasizes that Dri-Die is still in the experimental stage and none will be marketed for general use until much further research has been completed and the proper authorization given by federal agencies.

According to the company, a prospective advantage of the product, in addition to its lethal qualities, is that its action is fundamentally physical, so insects may not develop tolerances to this material.

NAC MEETING

(Continued from page 1)

business toward seeking a push-button solution to current problems.

"On every side you can see businesses and businessmen who are coming to believe that there is a way to avoid responsibility," Mr. Washburn said. "They seem to believe that somehow or other there is a way to use gadgets, gimmicks or exotic techniques that will make it possible to get results without inspiration, perspiration, or ever sticking out their necks."

Mr. Washburn said there are manufacturers who misstyle their products then fire their advertising agencies because the public won't buy; manufacturers who spend a million dollars on TV and 10¢ on a handbook for the service man; wholesalers and distributors who expect to collect more than a third of their commission on goods they never see, sell or ship; salesmen who think they have put in a good day when they show a film, hand out copies of a folder and attend a sales meeting on time; retailers who can't answer a simple question about the products they sell without referring to a tag.

"I am glad that very little of this kind of thinking has thus far rubbed off on the agricultural chemicals industry," Mr. Washburn said. "We still are the kind of business where the empty promise and the gaudy slogan have not yet replaced honest effort and sincere service."

Mr. Washburn said he would make these predictions for the next quarter century:

"Good salesmen, who know their business, and know how to give real service, will be in as much demand as they are today.

"A special price will never provide a satisfactory, long-term substitute for quality, service and salesmanship.

"No one will have discovered a way to substitute direct mail for man power.

"People will still be hoping that they can get something for nothing, but nobody will seriously expect it."

Mr. Washburn said that as suppliers to agriculture, the industry must keep itself aware of the trends and tastes and the marketing progress of the end products of agriculture. If the industry could have a forward look at the end of the next quarter century, he said, it would know the kind of products Americans would be buying, and would know what kind of changes occurred in taste and in product preferences. Thus, the industry automatically would know today where to put its research dollars and how to gear its selling organization for the future.

While industry must do these things without the forward 25-year look, it certainly cannot do them without a "deliberate and constant effort on our part to keep abreast of what is going on outside of our industry," Mr. Washburn said. "More and more business will require well-rounded farsighted people who can master far more than the day-to-day procedures of selling our products."

Mr. Washburn was followed on the program by a report by members of the NAC staff and by a talk, "Product Liability Claims and Suits," by John D. Conner, NAC counsel, Washington.

The session ended with a panel discussion on new and expanding markets for which Jack Dreessen, of the NAC staff, served as moderator.

Chemicals are now being extensively used to keep America's roadsides attractive, it was reported by Wilbur J. Garmhausen, chief landscape architect for the Ohio Department of Highways.

He said in his state alone most of the 55,000 acres of roadsides along 16,000 miles of rural highways are sprayed with chemicals. This is done to control weeds, minimize insect damage and, in some cases, promote or control the growth of grass.

"The proper use of chemicals will not only help to do the job, but may do it easier, more economically and often better if they are used wisely—which entails careful planning as well as careful application by well-trained crews," Mr. Garmhausen said.

"Ohio started spraying all of the roads in one county in 1953," he said. "By 1957, approximately 73% of the roadsides on the rural mileage in the state highways were sprayed, and this included spraying roadsides in varying amounts in 72 of Ohio's 88 counties."

The state's most extensive program, he added, is in the use of weed-killers. Acreage along 12,000 miles of highway in the state is sprayed to control weed growth during a three-year program. Spraying is done at a rate of three applications a year, and, afterwards, only one or two applications are needed on a spot basis for localized weed control.

Mr. Garmhausen gave the following breakdown of costs:

The average cost per mile for spraying in 1953 was $16 39 and in 1957 it was $18.81.

The cost per mile of mowing sprayed roadsides (both sides) in 1953 was $91.78 and in 1957 it was $63.61.

The combined cost of spraying and mowing in 1953 was $108.17 and in 1957 it was $80.04.

The cost per mile of mowing roadsides (both sides) not sprayed in 1953 was $92.75 and in 1957 it was $111.26.

Dr. Herbert L. Haller, Agricultural Research Service, U.S. Department of Agriculture, said that two developments have resulted in wide explorations of the soil fumigation field by scientists in both public and in industrial research. These developments are:

"1. Recognition that soil fumigants are also useful in controlling noxious bacteria, fungi and weed seed, and

"2. The rather recent realization of the crop losses caused by soil and habiting pests."

Also it is no longer possible for farmers to abandon infested soils and move to new lands, Dr. Haller said.

He reported that most of the soil fumigants used today are applied to soil to be used for crops having a value in excess of $400 per acre. About 20% of the four million acres in this category are fumigated.

In 1958, about half of the tobacco (400,000 acres) in the southern states was planted on land fumigated while ten years ago only a few thousand acres were treated, Dr. Haller said.

"Soil fumigants offer wide opportunities to the commercial producer," Dr. Haller said. "Damage to our crops by underground pests is enormous and still much underestimated. The practice of controlling these pests by chemicals is only in the early stages of development. The possibilities for further expansion appear to be almost unlimited.

"Crops are grown on more than 300 million acres each year in the United States alone and it is becoming increasingly evident that a considerable portion of these are subject to damage by underground pests. Yet soil fumigants are being used on less than 1% of the acreage."

A third member of the panel, J. W. Johnson, Union Bag-Camp Paper Corporation, Savannah, spoke on "Forest Pests Relative to New and Expanding Market for Forest Pesticides."

Noting that insect attacks on forests can be devastating and spectacular, Mr. Johnson pointed to an epidemic of the Engelman spruce beetle which swept the Rocky Mountains between 1942 and 1948, killing four billion board feet of timber—enough to build 400,000 five room frame houses.

"Not so obvious, though perhaps no less important, is the insidious destruction wrought by insects," Mr. Johnson said. "Killing a single tree here and there, or a small group from place to place, the pine engraver beetle is estimated to have destroyed 119 million board feet and 190,000 cords of southern yellow pine in 1955 alone in the southeast. And 1955 was not as bad a year as 1954."

Mr. Johnson also listed as destructive forest pests fungi, forest animals and plants, including tree species.

He said that the degree of expansion of the forest pesticide market hinges on a great deal of additional research, both by the agricultural chemicals industry and by foresters. He listed these areas of need:

Those who use pesticides for control of forest pests must know a lot more than they do at present about the exact results of that use.

There is an acute need of more selective pesticides.

There needs to be worked out the optimum use techniques for the pesticides that are presently available.

There must be a continuing development of new pesticides.

There needs to be a constant lookout for new and better concepts of pest control and pesticide use.

Mr. Johnson said he believe that, "the growing importance of our forest economy, the corollary increasing intensity of forest management practices and the constant threat of new or newly-dangerous pests will definitely result in new and expanding markets for forest pesticides."

Anchor man of the panel discussion was M. W. Melander, Stauffer Chemical Co., New York, who spoke on "Export Horizons."

He said: "As long as we are going to depend on disposing of close to 30% of our agricultural chemical products in the foreign market, we must adapt ourselves to an ever changing horizon. This we can best do by continuing to look for new markets, expanding old ones by offering better technological assistance, better products and service and to be reconciled to the fact that we must be as flexible to as many changes as there are types of sunsets, sunrises, and clouds."

1,600 Visit Northwest Garden Supply Show

PORTLAND, ORE.—An estimated 1,600 garden supply retailers from Oregon, Washington, Idaho, Montana, California and British Columbia attended the 8th annual Northwest Garden Supply Trade show here at the Masonic Temple's grand ballroom.

The affair featured 65 booths displaying the very latest in supplies to make home gardening easier and more successful, according to Russ Hays, general manager of the sponsoring Oregon Feed & Seed Dealers Assn.

An hour long "brainstorming session" was one of the show's features. During this affair trade members discussed such industry problems as store inventory control, advertising, salesmen's commissions, store design, merchandising and credit programs.

Thomas Prideaux, Portland, U.S. National Bank vice president, discussed "Magic of Tomorrow."

"How to Buy, Display and Merchandise Nursery Stock & Bedding Plants," was explained by Bryan Taylor, Taylor Nurseries, Seattle.

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Industry Patents and Trademarks

2,857,259

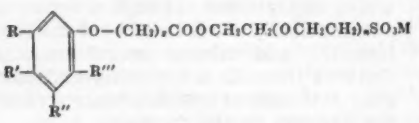
Pre-Emergent Herbicide. Patent issued Oct. 21, 1958, to William E. Weesner, Dayton, Ohio, and Philip C. Hamm, Webster Groves, Mo. The method of preventing plant growth which comprises applying to a medium supporting said growth a pre-emergent herbicidal composition comprising formaldehyde 2,4-dinitrophenylhydrazone as the active ingredient, said hydrazone being present in said composition in a quantity which is toxic to plant life.

2,857,260

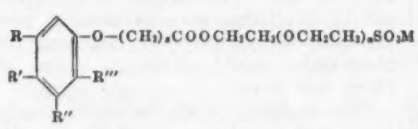
Isopropyl-3-Chloro-6-Methyl Phenyl Carbamate and Herbicidal Compositions and Methods Employing the Same. Patent issued Oct. 21, 1958, to Henry F. Woodward, Jr., Mission Hills, Kansas, assignor to Spencer Chemical Co. The method of combating weeds which comprises applying a herbicidal concentration of isopropyl - N - (3-chloro-6-methylphenyl) carbamate to the environment in which weed growth is undesirable.

2,857,261

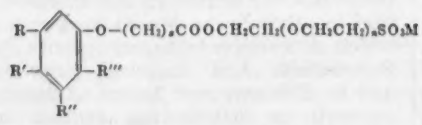
Herbicidal Sulfoalkyl Esters of Phenoxyacetates. Patent issued Oct. 21, 1958, to Milton Kosmin, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo. A sulfo-ester having the formula



in which R, R′, R″ and R‴ are selected from the class consisting of hydrogen, chlorine and alkyl radicals of from 1 to 4 carbon atoms and in which at least one of R, R′, R″ and R‴ is chlorine, x is a number of from 1 to 2, n is a number of from 0 to 1 and M is a water-solubilizing cation. A herbicidal composition comprising an inert carrier and as the essential active ingredient a phytotoxic quantity of a sulfo-ester having the formula:



in which R, R′, R″ and R‴ are selected from the class consisting of hydrogen, chlorine and alkyl radicals of from 1 to 4 carbon atoms and in which at least one of R, R′, R″ and R‴ is chlorine, x is a number of from 1 to 2, n is a number of from 0 to 1 and M is a water-solubilizing cation. The method of destroying undesirable plants which comprises applying to said plants a phytotoxic quantity of a herbicidal composition comprising as the essential active ingredient a sulfo-ester of the formula:



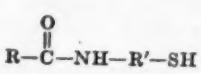
in which R, R′, R″ and R‴ are selected from the class consisting of hydrogen, chlorine and alkyl radicals of from 1 to 4 carbon atoms and in which at least one of R, R′, R″ and R‴ is chlorine, x is a number of from 1 to 2, n is a number of from 0 to 1 and M is a water-solubilizing cation.

2,857,262

Method of Manufacturing Fertilizers by Evaporating Slurries Containing Fertilizer Constituents. Patent issued Oct. 21, 1958, to James L. Graham, Florence, Ala., assignor to Tennessee Valley Authority. In a nitric phosphate process for the production of fertilizer from materials comprising phosphate rock, nitric acid, and ammonia wherein a slurry containing about 20 to 40% ammonium nitrate, about 16 to 24% dicalcium phosphate, about 1 to 4% monoammonium phosphate, 0 to about 16% calcium sulfate, 0 to about 3% calcium nitrate, 0 to about 11% potassium nitrate, about 1 to 4% acid insoluble materials, and about 30 to 36% water is produced and the slurry is dried, that improvement which comprises introducing such slurry into an evaporating zone without addition of potassium chloride; therein agitating and intimately contacting said slurry with hot combustion gases at temperatures in the range from about 2500° F. to about 400° F.; and withdrawing a resulting fluid slurry containing from less than 1% to about 15% moisture.

2,857,282

Inhibition of Enzymes in Plant Tissue. Patent issued Oct. 21, 1958, to Eugene F. Jansen, Berkeley, Cal., assignor to the United States of America as represented by the Secretary of Agriculture. A method comprising treating raw edible plant material normally subject to enzymatic deterioration with a compound of the formula



wherein

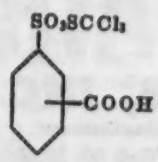
is an aliphatic acyl radical and R′ is an aliphatic hydrocarbon radical, the said compound being applied in a concentration about from 0.01 to 5% to inhibit the enzymatic deterioration.

2,857,306

Insecticidal Materials. Patent issued Oct. 21, 1958, to Earl W. Gluesenkamp, Gail H. Birum and William E. Weesner, Dayton, Ohio, assignors to Monsanto Chemical Co., St. Louis, Mo. The process which comprises contacting a phosphite ester of the formula $(RO)_2PXR'$ where R is selected from the class consisting of alkyl, chloroalkyl and bromoalkyl radicals, R′ is selected from the group consisting of R and alkali metals, and X is an atom selected from the class consisting of oxygen and sulfur, with a chlorination product of trithiane where the chlorinating agent is selected from the class consisting of chlorine, sulfur monochloride, sulfur dichloride, thionyl chloride, sulfuryl chloride and mixtures thereof, and the chlorination step is conducted under substantially anhydrous conditions to introduce from one to three moles of chlorine per mole of trithiane into the chlorination product, and thereby forming a phosphorus-containing insecticidal product. An insecticidal composition comprising an inert carrier and as the essential effective ingredient, the phosphorus-containing insecticidal product produced by the process of claim 1.

2,857,307

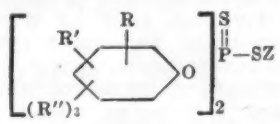
Fungicides and Methods of Preparing the Same. Patent issued Oct. 21, 1958, to Jan Hendrik Uhlenbroek, Weesp, Netherlands, assignor by mesne assignments to North American Philips Co., Inc., New York. A fungicidal nonphytotoxic preparation comprising a fungicidally effective amount of a compound corresponding to the general formula



and an inert carrier therefor.

2,857,308

Method of Destroying Nematodes Employing Phosphorodithioates. Patent issued Oct. 21, 1958, to Joseph W. Baker, Nitro, W.Va., assignor to Monsanto Chemical Co., St. Louis, Mo. The method of destroying parasitic worm life in agricultural soils infested with nematodes which comprises contacting the said organisms with a toxic concentration of a compound of the structure



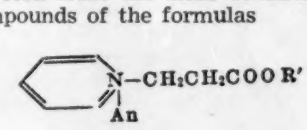
R, R′ and $(R'')_3$ representing the 5 substituents on the carbon of a phenyl radical, where R is selected from the group consisting of chlorine and bromine, R′ is selected from the group consisting of chlorine, bromine, hydrogen, lower alkyl, phenyl, R″ is selected from the group consisting of chlorine, bromine, hydrogen and combinations thereof, and Z is selected from a group consisting of hydrogen, ammonium, metal salt forming groups, N,N-di loweralkyl analine salt forming groups, alkyl and di loweralkylaminoethyl.

2,857,309

Dimethylbenzyl Chrysanthemumates as Insecticides. Patent issued Oct. 21, 1958, to William F. Barthel, Catonsville, Md. An insecticide comprising a member selected from the group consisting of 2,4-dimethylbenzyl chrysanthemumate and 3,4-dimethylbenzyl chrysanthemumate in an inert carrier.

2,857,310

Quinolinium and Pyridinium Quaternaries. Patent issued Oct. 21, 1958, to Samuel Allen Heininger, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo. Quaternary salts selected from the class consisting of compounds of the formulas



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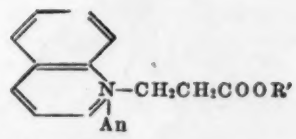
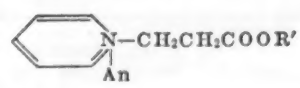


where R′ is an alkyl radical containing from 4 to 18 carbon atoms and An is an anion selected from the class consisting of chlorine and bromine. The method of killing insects which comprises contacting said insects with a lethal concentration of a quaternary salt selected from the class consisting of compounds of the formulas



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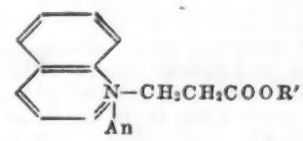

where R′ is an alkyl radical containing from 4 to 18 carbon atoms, and An is an anion selected from the class consisting of chlorine and bromine.

Industry Trade Marks

.The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Isoval, in capital letters, for insecticides and rodenticides in liquid and solid forms. Filed Nov. 22, 1957, by Motomco, Inc., Clark, N.J. First use Nov. 8, 1957.

Amburgo, in capital letters, for rodent killer. Filed Dec. 9, 1957, by The Amburgo Co., Inc., Philadelphia, Pa. First use in September, 1954.

Sevin, in capital letters, for 1-Naphthyl N-Methylcarbamate for use as an insecticide. Filed Dec. 31, 1957, by Union Carbide Corp., New York. First use July 24, 1957.

Crag, in capital letters for insecticide. Filed Dec. 31, 1957, by Union Carbide Corp., New York. First use July 24, 1957.

Nu-Bud, in capital letters, for plant fertilizer. Filed May 26, 1958, by Clarel Laboratory, Chicago. First use March 25, 1958.

Grobark, in capital letters, for soil conditioner and mulch. Filed June 25, 1958, by Brown Co., Boston, Mass. First use June 2, 1958.

Sure-Sprout, in hand-lettered style on drawing, for compositions without earth and with or without fertilizers or plant foods for specific plants, and water-free from calcium and magnesium compounds for supplying moisture to growing plant. First use Dec. 4, 1943.

Bonus, in capital letters, for fertilizer with weed control. Filed Aug. 11, 1958, by O. M. Scott & Sons Co., Marysville, Ohio. First use July 30, 1958.

FIRST CHECK WITH NATIONAL POTASH

for DUSTLESS • FREE-FLOWING • UNIFORM K_2O

Leading fertilizer manufacturers depend on NATIONAL POTASH for *Coarse* and *Standard* grade muriate of potash. Prompt delivery is assured from our extensive storage and modern shipping facilities. *Telephone, wire or write us today.*

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ROUNDTABLE

(Continued from page 4)

pay off to the fertilizer manufacturer was brought out in a discussion on the subject. C. A. Hoffman, Wheelabrator Corp., Philadelphia, told the group that control of dust in a fertilizer plant results in greater profits since it prevents loss "up the stack or down the drain." He said that a cloth bag dust collector in one plant caught some 1,800 lb. of material an hour.

Employee morale is up and there is less hazard and less air pollution with adequate dust collection facilities, he added.

F. A. Retzke, Smith Agricultural Chemical Co., Columbus, Ohio, presented some figures on fertilizer losses due to excessive dust. A dust collector set up in a plant caught some 1,700 lb. an hour, he reported. On the basis of its being worth $20 a ton and the plant's capacity 40,000 tons a year, the recovery would be worth $34,000. This is only part of the story, he said, since no collectors can catch 100% of all dust. Economics enter into the picture in trying to catch the last 10%; and the cost of additional equipment to take care of this situation might not pay off. However, good basic units to reduce dust escaping can contribute much to a plant in the way of reduced maintenance costs, more efficient workmen, better relations with the union and the neighbors, and less air pollution.

The Potash Company of America presented the entire round table group with a cocktail party and luncheon at the Mayflower on Wednesday noon.

The round table discussions continued Thursday and Friday, Nov. 6-7 at the hotel. Report of the final two days will appear in a subsequent issue of Croplife.

Houston N. Clark Appointed Assistant To PCA President

WASHINGTON — F. O. Davis, president of Potash Company of America, has announced the appointment of Houston N. Clark to the position of assistant to the president.

Mr. Clark joined Potash Company of America after his graduation from Rice Institute in 1941. Since that date, except for three war years during which he served as navy ensign, he has served in the capacity of derivative plant supervisor, researcher, chemical plant foreman, refinery section supervisor and assistant refinery superintendent.

Since Aug. 1, 1956, Mr. Clark has served as general superintendent of PCA's Carlsbad and Dumas, Texas, plants.

Stockton Insecticide Plant Is Opened By Pacific Guano

STOCKTON, CAL.—A new, 10,000 sq. ft. insecticide plant and warehouse owned by Pacific Guano Co. of Berkeley opened here recently.

The building houses a newly purchased insecticide dust mill and provides sales, office and storage space for the warehousing and distribution of fertilizers, insecticides, herbicides and seeds. Formerly located in Berkeley, the dust manufacturing operation was moved to Stockton because of its central location from a distribution standpoint, it was announced.

The move is also part of a general reorganization program in which the company is decreasing its emphasis on the garden market and concentrating on increasing its agricultural market, a company spokesman said. The plant serves the company's customers in the upper San Joaquin and lower Sacramento valleys in an area south to Hollister and north to the vicinity of Woodland and Robbins.

More than 100 types of finished field-strength insecticide dusts are produced in the mill. The mixing and blending process is almost completely automatic once the proper formula for strength and consistency has been determined for the particular crop and method of application. Workmen empty bags of the basic chemicals or technical chemicals into the mill which sends them through a series of automatically controlled milling, blending and mixing operations and delivers them to a weighing and bagging attachment which prepares them for delivery to the farmers.

Although most of the dust produced at the Stockton mill is applied by airplane, some is produced for application by ground dusting equipment in a dust or liquid form. For liquid application, the dust is delivered in dry form and mixed with water by the farmer.

The dust is mixed directly to the farmer's specifications and is delivered by Pacific to air strips or the farmer's fields depending on the method of application. Because of built-in dust collection and other safety features, no exceptional precautions are required in handling the chemicals used, although some of them are toxic.

The company does, however, maintain a laboratory at Berkeley for analysis and quality control of the finished dust. The mill is in peak operation during the summer, since the area it serves is essentially a one crop region, but stock dusts are produced during the off-season.

Pacific has installed radio communication between its sales personnel and the plant office at Stockton to solve the problem of selling directly to farmers over such a wide area. It is used to call in rush orders, determine delivery times, check on availability of stocks and to get immediate answers to technical questions. Similar networks are in operation in other areas served by Pacific, which has manufacturing plants in Bakersfield, Los Angeles, Brawley and in Tolleson and Toltec, Arizona, as well as distribution centers in other locations in California and Arizona.

D. S. Howell, manager, directs the Stockton operation which employs 10 people.

WHEAT PEST

BLACKSBURG, VA.—Stinking smut is a current threat to Virginia's wheat crop. S. B. Fenne, plant pathologist at Virginia Polytechnic Institute, says reports indicate that stinking smut of wheat is quite severe in some areas of Virginia, and that several crops have been turned down by inspectors. Unless control measures are taken immediately, next year's wheat crop will be a complete failure in many areas, Mr. Fenne warns.

Footwear courtesy of Abercrombie & Fitch Company

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Sinclair is in a position to fill all your requirements—exactly. We can speed top quality nitrogen products to you from Hammond, Indiana—the center of the Midwest's transportation system.

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Anhydrous Ammonia • Ammonium Nitrate Solutions • Aqua Ammonia • Nitrogen Fertilizer Solutions • Aliphatic Solvents • Odorless Solvents • Aromatic Solvents • Heavy Aromatic Solvent • Toluene (Nitration Grade) • Xylene (Five Degree) • *para*-Xylene • Sulfur Sulfonates (Oil Soluble) • Corrosion Inhibitors Lube Oil Additives • High Purity Propylene

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Special Merchandising Section

Better Selling

Marketing News and Features

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The best promotion that Anaheim (Cal.) Feed & Seed has in use at the present time is the "Silver Bonus," a copyrighted program in which the firm has been participating for several years. It has attracted many new customers.

The program works like this: Anyone coming into the store is invited to register his name and address on an entry blank. No purchase is necessary. A panel of judges decides which statement they believe best completes the phrase, "I like to shop in Anaheim because . . ."

A winner is named each week. If the winner made a purchase of $5 or more and proves it by producing a sales slip the award may range from $200 to $700, depending on how long award money has been accumulating. If the sales slip is for less than $5, the award is one half the total amount available that week. If the winner made no purchase the award is $5.

Profitable New Service

A profitable new service for the Lucan (Minn.) Grain & Fuel Co. has been the weed spraying program. Out of a total of 1,000 gal. of spray chemicals sold annually, the firm applies about 600 gal. This is used on about 5,000 acres, mainly in flax, oats and corn. Highboys are used for application.

The spray program helps business in several ways. First, the firm likes to buy clean grain and spraying helps keep grain clean. This is especially applicable to mustard which is controlled by 2,4-D. Mustard has practically disappeared in the trade area since the spray program was started. As a result farmers take less dockage when selling grain and get a better price. Of course they like it.

The income from the sale of the farm chemicals is worthwhile and of course applicating charges produce added income.

As the firm works more into grass weed control, it expects this program to produce additional revenue.

The firm conducts an extensive weed control information service.

Liquid Fertilizer Turns Into Profitable Sideline for Oklahoma Gas Station Owner

Bringing liquid fertilizer into an area where it had not been used before was a challenge to H. E. Wilkins of Blackwell, Okla. He owned a gasoline and oil business and had many farmers as customers. He became interested in fertilizers because he had seen how they had raised wheat and grain sorghum yields elsewhere.

In 1953 he began selling anhydrous ammonia on a small scale and bought applicators of his own. No one knew much about it, so he got a few farmers to make trial tests, and he applied the material for them.

From this small beginning, he has now built a substantial business, which constitutes a very profitable sideline to his main sales in gasoline and oil. He now has storage for 30,000 gal. and six large applicators.

Because of the large storage, he began to get calls from dealers in other towns and now does a considerable business in selling to them. He also has smaller storage tanks which may be leased or loaned to larger farmers who do their own work.

In spreading the material for land owners, Mr. Wilkins charges a certain amount for each acre and gets retail prices for the materials. If farmers prefer to do their own spreading, he spends ample time in getting them started out properly.

At first farmers were dubious about liquid fertilizer. In fact, they knew little about any kind because it had seldom been used in that area. Now they are accepting it as a modern way of farming because they have seen where 40 lb. nitrogen an acre increased yields by as much as one fourth.

In order to make the season last longer and sell more materials, Mr. Wilkins takes soil samples free of charge and has them analyzed at a laboratory. By starting his sales campaign early, he has succeeded in getting some work done in February. This has increased business, and it has reduced the later season sales very little.

In addition to anhydrous ammonia, he is now stocking dry fertilizer. This will work in nicely with the other kind, he thinks.

Fertilizer makes a nice sideline to his other business. He can sell to many of his regular customers. He can use the same trucks and tractors, the same advertising and to a great extent utilize the same employees. He has also found that many farmers who use his fertilizer service are also buying gasoline, oil and other farm products from him.

When he first started, the only fertilizer sold was in a nearby area. Now the customers near town have increased considerably, and he is making some sales 40 miles away.

His methods in building a profitable business might be listed as follows: He has plenty of storage and good equipment; he has learned all he could about fertilizer; he knows the soils and cropping history of the field to be fertilized; he gives information and advice gladly and free of charge; and he is prompt and courteous in filling all orders.

Complete Repair Shop Helps Store Sell Other Merchandise

By JESS F. BLAIR
Croplife Special Writer

A farm chemical store can fit in nicely with most feed and seed companies. At Beatrice, Neb., the Ellers & Pease Grain & Seed Co. found a chemical department could bring in many new customers and increase sales to those already buying feed from the firm.

Orvin Meierhenry, manager of the retail store, has brought about something not ordinarily found in a farm store. This is a complete repair shop for pumps and sprayers of all kinds. The shop is located in the basement of the store and is one of the very few in eastern Nebraska.

"It's a great sales booster," said Mr. Meierhenry. "Many farmers have trouble with pumps and sprayers after a few seasons usage. They bring them here to be repaired. Now they are buying most of their equipment from us."

The store handles several kinds of such equipment, from the tiny one-pint sprayer to the very large ones that cover several cultivated rows. There is also a complete parts department, which saves sending off for parts when farmers are in a hurry.

"We get some of this work in the off-season," said Mr. Meierhenry, "which helps take the slack out of the dull seasons."

The store began to stress fertilizers a few years ago, and has built a large business from it. Even though the area had a dry year or two, the sale of fertilizers has steadily increased.

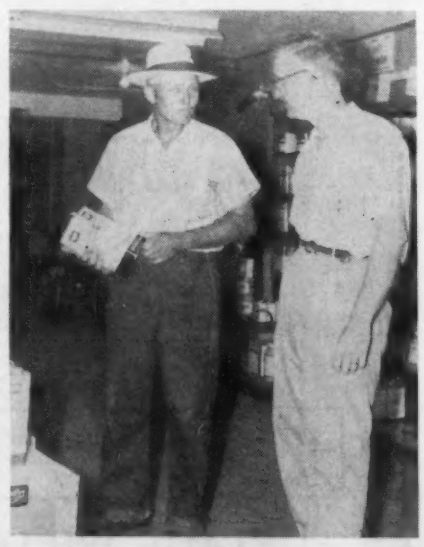
"We had to do a bit of selling," he said. "The best way to get fertilizers started is to talk to a few leading farmers. We worked with them until they became convinced that fertilization would pay, then the others began using it."

The firm at one time had the most rental fertilizer equipment in the area. They kept 30 machines which were rented to farmers or pulled by the company's tractors. This custom spreading business constituted about 90% of all fertilizer sales. However, the trend in this particular area is for the farmer to do the work himself.

"Now we do about 25% custom spreading," said Mr. Meierhenry. "This is still a community of family-sized farms, and farmers try to do as much of their own work as possible. They also know more about fertilizer and how to apply it. When they want help, we are out there to get the drivers started."

For the rental machines, the firm receives an average of 60¢ an acre, plus regular price for the fertilizer sold. They also have a sort of sliding scale, whereby the farmer pays a cent a pound if less than 80 lb. of material is applied per acre, and a

(Turn to REPAIR SHOP, page 12)



REPAIR SHOP HELPS—A complete sprayer repair shop in the basement helped the Allers & Pease Grain and Seed Co., Beatrice, Neb., gain more profits and new customers. Shown above is Orvin Meierhenry (right), manager, selling a customer insecticide.

Novel Merchandising Idea Pays Off in Extra Customers

Many a farm supply store owner could use a novel merchandising idea like the one which creates more goodwill and builds more volume for Andrew Farm Store, Jefferson, Iowa.

Owner James Andrew and general manager Ken Kinsman frequently make trips to customers and take pictures of them in connection with their crop, garden or herd activities. Then when the picture is developed, they enclose it in a neat distinctive frame and give it to the farmer.

The picture frame carries the words "Compliments of Andrew Farm Store, Jefferson, Iowa."

The store buys the picture frames in lots of 100. Farmers who are presented with these pictures usually are very pleased and find a spot for them on the kitchen wall. Thus the name of the Andrew Farm Store is seen by many visitors.

Mr. Andrew and Mr. Kinsman try to cover the entire range of their customers in taking such pictures. A gardener who won many prizes at a county fair was photographed right in the field as he was preparing to load his station wagon with prize entrants to the fair.

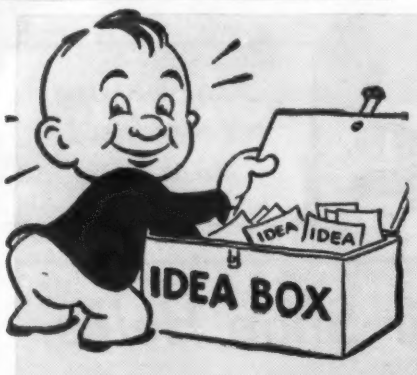
On other occasions the two men have taken pictures of cattle raisers, hog raisers, poultrymen, usually showing some farm activity in which they are engaged. Many of the pictures, with accompanying data, are also used in the farm store's advertising program.

"It's a small extra cost for framing a picture, it's true," states Mr. Kinsman, "but such pictures get much better placement in a farm home than would an ordinary print. Be-

(Turn to NOVEL IDEA, page 12)

GIRL PEST-ASIDE

PAINESVILLE, OHIO — Japanese beetles were threatening her father's vineyard here so Elaine Hakola, 12, enlisted a girl friend and declared war on the pesky pests. Instead of using more conventional pesticidal methods, in two days the girls personally collected 1,222 beetles and permanently discouraged them.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6821—Range Fertilization Report

Balfour, Guthrie & Co., Ltd., has prepared a folder entitled, "2nd Report to California Ranchers on Range Fertilization." The brochure states that "second and third year results show average yearly increase in profits of $14.29 per acre." The folder will be sent if you will check No. 6821 on the coupon and mail it to this publication.

No. 6822—Fertilizer Formulation Pad

A new fertilizer formulation pad, suited as a guide for using "Uramon" ammonia liquors, has been issued by the DuPont Co., polychemicals department. The inside cover of the pad contains pertinent information on composition of fertilizer materials, ammoniation rates of phosphates, miscellaneous conversion, and water content of fertilizer materials. For information on how to receive pads, check No. 6822 and mail.

No. 6823—Engine Driven Pump

Marine Products Co. announces an engine driven pump of all-iron construction for application of liquid fertilizers. The unit, called Flomax 8, is

designed to withstand the corrosive effect of pumping liquid fertilizers, the company says, and is entirely self-contained with its own gasoline engine. The pump requires no power take-off connection and it is put into operation immediately after the piping connections are completed. For more complete details, check No. 6823 on the coupon and mail to this publication.

No. 7188—Modern Farming Film

The recent introduction of "do-it-yourself" construction to steel farm buildings is the topic of a 16 mm color or sound film, "The New Look in Modern Farming," released by Stran-Steel Corp. Shown in detail is the complete erection of an all-steel pole barn by four men in one week. For further details, check No. 7188 on the coupon and mail. Please print or type.

No. 7205—Spring Truck

The Everlevell Co. announces a new economical spring truck. The company says the truck eliminates operator's fatigue by maintaining constant working level. A change of 3 lb. will readjust the platform to proper working height of about 29 in. from floor level. The truck handles up to 500 lb. and can be constructed to different weight requirements. Units can be custom manufactured in different sizes for special applications, the company says. For more details, check No. 7205 on the coupon and mail to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6813—Revised Products List

A newly revised chemical products list titled "Hooker Chemicals," has been published by Hooker Chemical Corp. The bulletin contains five chemicals which have recently been made available for general sale on a commercial scale. A description, chemical formula, physical data, uses and types of shipping containers are detailed for each of the 65 chemicals listed. Check No. 6813 on the coupon and mail for details.

No. 6803—Air Shipments

ParcelAir, a method of shipping fertilizer and farm chemicals by air with one to three-day service, has been started by American Shippers, Inc. The service will ship packages of any dimension up to 40 lb. anywhere in the U.S. For further details check No. 6803 on the coupon and mail it. Please print or type name and address.

No. 6817—Suspension Material

Carbopol, a material which will suspend particles in a solution, has been announced by the B. F. Goodrich Chemical Co. The material can be used in various herbicides and other agricultural wettable powders. According to the company as little as .05% Carbopol, based on the weight

of the total mixture, will retard settling and eliminate the formation of a hard cake. Its use for suspension in insecticides, herbicides and fungicides eliminates the need for repeated shaking. In addition, the company claims, Carbopol acts as a binder to adhere the particles to the foliage. Check No. 6817 on the coupon and mail for details.

No. 6810—Pesticides Booklet

"Your Ready-Reference Guide to Dependable Diamond Weed and Brush Killers for Effective, Easy, Economical Weed and Brush Control" is the title of an illustrated, 12-page booklet just issued by the Diamond Alkali Co. Briefly reviewed in this catalog are the Crop Rider, Fence Rider, and Line Rider groups of Diamond herbicide formulations. Application areas suggested in the booklet include farms; highways, secondary and rural roads; public utility lines; railroad, pipeline and other rights-of-way, and factory sites, plant grounds and other industrial areas. Check No. 6810 and mail for details.

No. 6819—Boomless Fertilizer Sprayer

The Broyhill Co. announces a new low clearance, boomless fertilizer sprayer designed for fast application of liquid fertilizer. The unit is ideal, the company says, as a rental piece. The sprayer has no boom pipes and the low silhouette prevents tipping on rough terrain, the company says. The unit will spray a 35 ft. swath. The trailer is of I beam construction with Timken Hi-Speed wheels. The tank is of steel with a 2-in. filler

opening and a 270-gal. capacity. For more information check No. 6819 and mail.

No. 7229—Liquid Tote Tanks

Tote System, Inc., announced the inclusion of a 300-gal. capacity Tote tank in the "Trial Rental Program" instituted by the firm last spring. The tanks are usable for any liquid material and have eliminated the 55-gal. drum in a number of industrial applications, the company said. For further details, check No. 7229 on the coupon and mail to this publication.

No. 7165—Bagging Scale Bulletin

The Richardson Scale Co. has published a bulletin describing its E-50

Send me information on the items marked:

- ☐ No. 2053—New Bag Concept
- ☐ No. 6803—Air Shipments
- ☐ No. 6810—Pesticides Book
- ☐ No. 6811—Turfgrass Manual
- ☐ No. 6812—Manufacturers' Handbook
- ☐ No. 6813—Revised List
- ☐ No. 6814—Pump Data
- ☐ No. 6816—Testing Machine
- ☐ No. 6817—Suspension Material
- ☐ No. 6818—Mobile Blender
- ☐ No. 6819—Boomless Fertilizer Sprayer
- ☐ No. 6820—Soil Booklet
- ☐ No. 6821—Fertilization Report
- ☐ No. 6822—Formulation Pad
- ☐ No. 6823—Engine Driven Pump
- ☐ No. 7165—Scale Bulletin
- ☐ No. 7175—Equipment Brochure
- ☐ No. 7188—Modern Farming Film
- ☐ No. 7205—Spring Truck
- ☐ No. 7229—Liquid Tote Tanks

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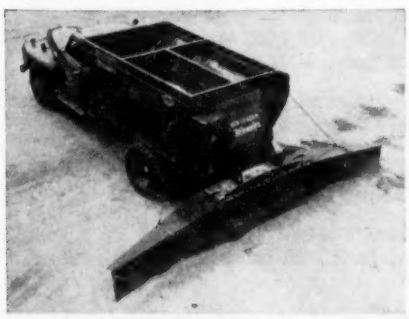
automatic bagging scale. The six-page, two-color bulletin, with illustrations and cut-away line drawings, details the E-50's design, capacities, gravity or power feed operation, and discharge. In addition, the bulletin contains engineering drawings, illustrations of suggested feeding arrangements and descriptions of accessories. Standard specifications and optional features are outlined, along with the E-50's ability to handle a variety of materials. A copy of the bulletin may be obtained by checking coupon No. 7165 and mailing to Croplife.

No. 6818—Mobile Blender

The Highway Equipment Co. announces—the "New Leader L-42S Mobile" Blender. The unit will blend and spread three fertilizers at the same time, the company says. The spreader operator can change the fertilizer ratio for varying soil conditions, as determined by soil tests,



while in the field. Three separate feedgates, each with a test box for metering, control the amount of spread, the company says, and a 7 h.p. engine drives the distributor fan assembly at a constant rate, regardless of truck speed. For more details check No. 6818 on the coupon and mail to this publication.

No. 2053—New Bag Concept

A single-gusset, sewn-valve multiwall bag which the manufacturers say is a new concept in bag construction, has been developed and introduced by Bemis Bro. Bag Co. Designers say the single-gusset is difficult to distinguish from the two-gusset multiwall when filled, but that it stacks uniformly and can be easily palletized. Advantages cited include additional usable space created by the

flat tube side, more room for product flow during filling, and reduction of blowouts. Products fed into the bags do not back up and clog the filler spout, cutting packaging time and labor. Extra space provided by the flat tube side often permits utilization of a shorter bag and consequent reduction of the manufacturing cost of bagged products, according to Bemis officials. For more information check No. 2053 on the coupon.

No. 6814—Adjustable Pump Data

Operating data on the ACAP pump for handling liquids or hygroscopic solids in suspension under variable capacity and head requirements are contained in new literature released by Allis-Chalmers. Standard requirements of the ACAP pump as compared to a standard pump with valve controlled discharges are noted in the bulletin, which includes range and power savings charts. For more information, check No. 6814 on the coupon and mail.

No. 7175—Gas Equipment Brochure

A description of the line of packaged inert gas producing equipment manufactured by Southwest Industries, Inc., is contained in a four-page brochure published by the company. In it are included inert gas generators, nitrogen generators, carbon dioxide generators, carbon dioxide removal units, gas purifiers, gas drying equipment, and compressors and storage systems. These units are used in a large number of industries, including grain storage. Check No. 7175 on the coupon and mail.

No. 6816—Testing Machine

Kohl Enterprises, Inc., Aquafil Division, announces a specially designed arbor press, in combination with a mechanical force gauge, for testing the compression of a given sample of fertilizer. After breaking the same sample, the machine will check the anti-caking ability of the sample over long time storage. For further details, check No. 6816 and send to this publication.

No. 6812—Manufacturers' Handbook

A "Manufacturers' Handbook" which was designed as a technical reference text for students and teachers is now available from Nitroform Agricultural Chemicals. Charts on nitrification are included to aid in understanding of the chemical and agronomic properties of good urea-forms. Check No. 6812 on the coupon.

No. 6811—Turfgrass Manual

A guide to fertilizing various turfgrass areas, entitled "Superintendents' Turfgrass Manual" has been published by Nitroform Agricultural Chemicals. The booklet contains a chart on the "Range of Nitrogen Feeding" and also information on supplemental feeding. For details, check No. 6811 and send to this publication.

No. 6820—Soil Conditioner Booklet

A booklet on "Dextran and Dextran Products as Soil-Conditioning Materials" has been prepared by the Commonwealth Engineering Company of Ohio. The illustrated publication contains data on dextran-treating experiments, plus tables, graphs and photographs of actual tests. For more details check No. 6820 on the coupon and mail to Croplife.

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REPAIR SHOP

(Continued from page 9)

half cent a pound where the total exceeds 80.

In renting equipment, Mr. Meierhenry stresses the importance of keeping minute records. The dealer should know exactly where each machine is, where it goes next, and set up a tight schedule so no time will be lost.

"Spreading fertilizer is naturally limited to a very few weeks," he said, "so you must have everything in readiness and get over the fields fast."

The firm handles several kinds of fertilizer, including anhydrous ammonia, ammonium sulphate and the standard mixes such as 16-20-0, 21-53-0 and others commonly used.

Within the last year or so, the firm began getting quite a run of side-dressing on irrigated corn and milo. Usually they will put on about 50 lb. of actual nitrogen per acre. Most of this business has been the result of planned promotion on the part of the manager and owners.

The firm uses a direct mail form which goes to 2,000 farm homes monthly. This is a sort of news letter telling about crop conditions, new materials and late developments in farming. It also mentions the need for fertilizers and when to apply them, and stresses insect control.

The sale of insecticides and herbicides has increased even faster than fertilizers. Also the store has developed a thriving business in livestock and poultry remedies. Mr. Meierhenry says this fits in closely with their feeding programs.

The store part has been carved out of the large brick building which houses the feed and heavier supplies. A room about 16 ft. by 40 ft. has been remodeled and dressed up with decorative walls, fluorescent lights and plenty of easy chairs for customers.

"We don't rush customers," Mr. Meierhenry said. "We try to make them feel right at home. We have soft drink machines and often buy drinks for the people who come in here. We invite them to sit down and chat awhile."

The walls are decorated with attractive signs. The most eye-catching sight, however, is a farm scene painted on a large window. This was done by a local artist and draws comments from every stranger who enters the store.

The store handles some hardware, but mostly confines the merchandise to farm chemicals, lawn and garden seed and small supplies, sprayers of all kinds, and seed.

Near the rear wall of the store there are 19 open barrels which have been painted a light green with a red rim around the top. Each one is kept filled with grass and legume seed. Each one has a tag showing the kind of seed and the price per pound. The barrels contain such seeds as timothy, alfalfa, fescue, Kentucky bluegrass, brome grass and others.

"We've worked rather closely with the Soil Conservation Service," said Mr. Meierhenry, "and learn when a farmer is interested in planting grass or legumes. Then we make it a point to visit with him. This part of the business is increasing steadily."

In the store with Mr. Meierhenry most of the time is Kenneth Reed, vice president of the firm. Mr. Reed is a former county agricultural agent and is responsible for much of the promotion work. He has held many customer meetings in feeding and farm management.

The two men found that one good way to demonstrate fertilizer was to plant it in strips, so the results would stand out prominently.

"This has been very effective," said Mr. Meierhenry. "But always pick your farmers when running an experiment. We choose an intelligent fellow who has no preconceived ideas. He should be someone who will cooperate and is well respected by his neighbors. Also the trial carries more weight if it is on the farm of a real dirt farmer. People look at it and know they can do the same.

"If you conduct tests on the field of some prominent business or professional man who is farming for a hobby, the result may not be so persuasive. We find that real farmers are our best salesmen. Help one of them make a higher yield or grow more pounds of meat and you'll get half a dozen other customers without asking for their business."

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A PROVED AND DEPENDABLE SOURCE OF SUPPLY

NOVEL IDEA

(Continued from page 9)

sides it gives our store the label of doing something extra and different for farmers, and many of them appreciate it."

Mr. Kinsman points out that modern day merchandisers say that a good picture is worth many words, and so this store is trying to make this principle work for them.

A wide list of products and services is offered by this farm store, which means that photo possibilities of customers using these are practically unlimited. The firm sells bagged and bulk fertilizer and also anhydrous ammonia. A full line of farm chemicals and other farm supplies is stocked.

INSECTICIDE STUDY REPORT

WASHINGTON—Exploratory studies by U.S. Department of Agriculture researchers were made between 1951 and 1958 on the use of lindane, malathion, methoxychlor, synergized pyrethrum, and ryania as insecticides to protect stored corn against rice weevil infestation. Ryania and lindane were dropped from further consideration, and the other three materials are undergoing further large-scale evaluation studies, which will be published. Results are to be used as a basis for evaluation studies on a commercial scale.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

North Dakota Nitrogen, Inc., of Bismarck, N.D., announced it had awarded a contract to the Chemical & Industrial Corp., Cincinnati, as consulting and construction engineer for a fertilizer plant in the Bismarck area.

Members of the National Agricultural Chemicals Assn. took a long look at 25 years of growth and progress in the pesticide field during the group's silver anniversary convention here Oct. 29-31—then more than matched the story of the past 25 years with some searching looks into the next 25 years. About 600 attended.

A panel discussion on accident case histories; the value of safety training in plants; safe handling of ammonia and solutions; and a clinical examination of the accident-prone individual made up an important part of the two-day annual meeting of the Fertilizer Section, National Safety Council in Chicago, Oct. 20-21.

An intensive effort to eradicate witchweed, a parasitic plant that attacks corn and some other crops, is getting under way in North and South Carolina, the U.S. Department of Agriculture announced.

A total of 1.9 million short tons of marketable potassium salts were produced in the U.S. in the first half of 1958, the U.S. Bureau of Mines reported. This tonnage contained 1.1 million tons of K_2O equivalent.

The Association of American Fertilizer Control Officials and the Association of American Pesticide Control Officials urged that defoliants, desiccants, plant regulators and nematocides should be brought within the scope of the Federal Insecticide, Fungicide and Rodenticide Act. The resolution was made at the two groups' annual meeting in Washington, Oct. 17 and 18.

The Association of American Fertilizer Control Officials, at its annual meeting, recommended that the taking of fertilizer samples be done at the individual fertilizer plants.

A conference on chemical control problems with emphasis on methods of analyzing fertilizers for determination of moisture, free acid, available P_2O_5 and other content, was held in Washington, Oct. 16.

Hugo Riemer was named executive vice president of U.S. Borax and Chemical Corp., following a meeting of the board of directors in New York.

Prices paid to farmers advanced 2% in the month ended Sept. 15, USDA announced. This forward move was a surprise to many economists who had not expected to see a favorable rise at this time.

The number of cotton acres fertilized each year is second only to the corn crop, according to a USDA survey. Of 19 million acres of cotton harvested in 1954, year of the survey, 58% had received fertilizer.

SunOlin Chemical Co., a joint subsidiary of Olin Mathieson Chemical Corp. and Sun Oil Co., was formed. The new firm will produce urea. James I. Harper of Sun Oil is president, and S. S. Johnson, Olin Mathieson, vice president.

Hercules Powder Co. announced that its new plant at Hercules, Cal., is producing urea in commercial quantities. The plant has a capacity of 20,000 tons a year.

California Spray-Chemical Corp., Richmond, Cal., announced that it plans to construct a $4,600,000 chemical fertilizer plant at Kennewick, Wash. Completion is scheduled for the end of 1959.

Page Edmunds was appointed assistant general manager of chemicals in the W. R. Grace & Co. Davison chemical division. Mr. Edmunds was also made vice president of Davison Chemical Co., Ltd., Canadian affiliate of the division.

Fertilizer and pesticide sales prospects in cotton-growing areas of the U.S. appear to be brighter for next year since gross income of cotton growers improved this season. Gross income was estimated at $1.95 billion as compared to $1.5 billion last year.

Tobacco acreages of U.S. were reported by USDA as being heavy users of fertilizer materials. A state-by-state survey revealed that practically the entire acreage of tobacco receives large applications of fertilizer.

The New England Fertilizer Conference held at Melvin Village, N.H., attracted more than 100 persons, and was told by one of the speakers that farming efficiency and the introduction of many new materials and devices comprise a greater revolution than was the industrial revolution of the early 1800's.

Justin Potter was named president of Virginia-Carolina Chemical Corp. at a meeting of the board of directors. He succeeds William H. Wilson who resigned.

Edward R. Schumann was named to represent the National Plant Food Institute in the St. Paul District.

Permits to mix and distribute fertilizer-pesticide mixtures were given by the state of Virginia, providing rules of labeling and procedure are strictly observed. Aldrin and Heptachlor were the pesticides mentioned specifically in the announcement by the state's Department of Agriculture.

Sulfur production during July was 359,384 tons of native sulfur and 47,173 tons of recovered, the U.S. Bureau of Mines reported.

J. H. Elliott, Rohm & Haas Co. of Canada, Ltd., was elected president of the Canadian Agricultural Chemicals Assn. at the group's meeting in Winnipeg in September.

A new coding system for improving the nomenclature of nitrogen solutions was suggested by the National Plant Food Institute. Its recommendation was based on the findings of an industry committee which made a study of the situation earlier.

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

A tall, lean faced nervous woman who wore glasses and a high necked dress, came into the Schoenfeld & McGillicuddy Farm Store early that morning. She was twisting a white handkerchief.

"Is Mr. McGillicuddy here?" she asked anxiously.

Tillie Mason looked up from her typing. "Not yet," she said. "He usually doesn't get here until ten o'clock."

"Ten thirty most of the time," Oscar said without looking up from his work.

"Perhaps Mr. Schoenfeld can take care of you," suggested Tillie.

"Oh, I have to see Mr. McGillicuddy himself personally." The woman seemed almost at the point of tears.

"Well, perhaps you can wait in his office. There's an extra chair there," suggested Tillie.

She knew the woman, a Mrs. Peterson. About 40, she had married a bachelor Swede farmer, Andrew Peterson, just six months ago. Mrs. Peterson, a former teacher, had never lived on a farm before, but Tillie had heard she was a wonderful housekeeper and cook.

Mrs. Peterson went into the office, seated herself meekly in a chair and waited. Five minutes went by. Ten minutes. Then Mrs. Peterson started crying softly.

"Oh, I can't help it. I can't help it." She dabbed her eyes.

A look of displeasure came over Oscar's face. "Ach, was ist?" he asked.

"Do you know my husband—Andrew Peterson?" asked the woman tearfully.

Oscar's face softened one thousandth of an inch. "Sure, I know him. He is one of the few farmers aroundt here that pays his bills. He neffer misses. If we had more customers like him, then we would be all right. These other crazy customers—"

"Oh, I know he's a wonderful man," sobbed Mrs. Peterson. "That's what makes it so terrible."

"What's so terrible?" Oscar asked, wondering if this trouble would impair Andrew Peterson's ability to pay his fertilizer bills on time.

More sobs. Then, "He—he's in love with another woman. Her name is Esther. He—he keeps calling her name in his sleep. It's—it's driving me crazy. I—I don't know what to do."

Oscar frowned. "In love with another woman? Is that the kind of stinker he is? Ach, we sell fertilizer, Mrs. Peterson. Love? That's for the lawyers to fix."

"Don't you call Andrew a stinker," said Mrs. Peterson, her lips trembling. "He's a wonderful man. It's this Esther who is terrible, trying to take him away from me. Oh, I wish Mr. Pat could help me. He—he got Andrew and me together at a farm picnic and Andrew proposed the next time he called. Oh, it can't end like this. It just can't. Not after all these years."

The door opened from the warehouse, and a sleepy eyed Pat came in. "Hello, Mrs. Peterson," he said. "Glad to see you." He stretched. "Man, what a night. Didn't get home until two. Played schafskopf with some friends and I'm short on sleep."

"You are short on a lot of things," muttered Oscar.

"What did you say, Oscar?"

"Schkip it," replied his partner.

Pat turned to Mrs. Peterson, and smiled. "What's wrong?" he asked.

Mrs. Peterson began sobbing and out came the story again. Andrew was calling a woman's name in his sleep—Esther. Not one night. But almost every night. Mrs. Peterson was beside herself. Would Pat tell her what to do? Should she see a lawyer and seek a divorce? Or should she stay?

Pat looked very puzzled. "Now, now, Mrs. Peterson, calm down," he said placatingly. "Why, Andrew is a fine man. If he mentions a woman's name in his sleep I don't think that means anything. Not to Andrew. I know he loves you."

"You do?"

Pat nodded. "Sure, he told me. He even insists on bringing us potatoes for our table all the time, Mrs. Peterson. Says he's so glad I introduced him to you. Would he do that if he didn't love you?"

"Oh, I'm glad to hear that. Then I am right. It's this woman Esther who is making all this trouble. I wish I knew who she was. I would tear her hair out."

Pat looked thoughtful. "Esther!" he repeated slowly "Esther!" Then, "Just a moment, Mrs. Peterson."

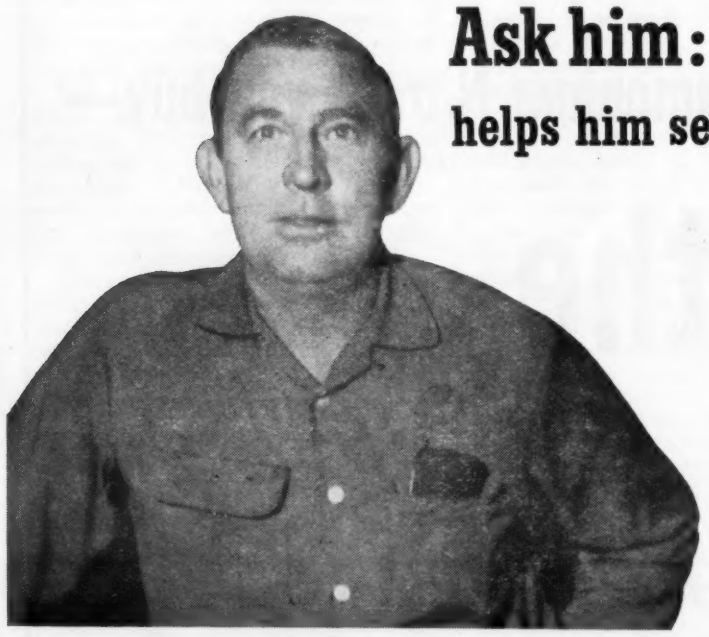
Pat got up, went to Tillie's desk and spoke to her in a low voice. The plump Tillie went to the files, got out some folders, gave them to Pat who took them and went back to his desk. Mrs. Peterson watched him anxiously.

Pat studied the material in the folders. With a slight, encouraging smile, he asked, "Mrs. Peterson, Andrew grew some fine corn this year, didn't he?"

For a moment the farm woman beamed. "Oh, wonderful. Andrew was so pleased with the crop. And he praised you, too, for your help in taking a soil test and urging him to fertilize more than he thought was necessary. But the big crop showed you were right. Oh, I wish we could be that happy again."

"Mrs. Peterson," Pat said slowly,

(Turn to OSCAR & PAT, page 15)



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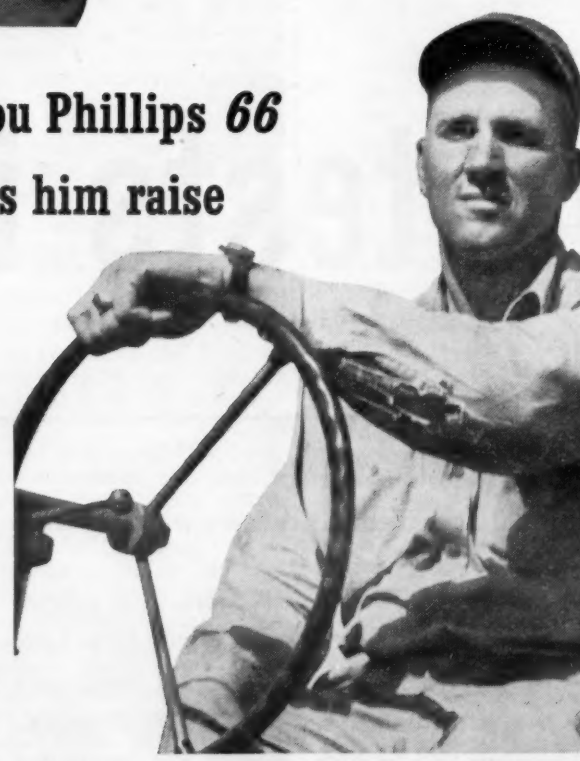
Clarence Osterbuhr, president of Anamo Co., Inc., Garden City, Kans., says: "I like to sell Phillips *66* Ammonium Nitrate because it's a first class product. But I also like Phillips service. Not only does my Phillips field man help me in many ways, but I can depend on the full resources of Phillips service, if I need them." Mr. Osterbuhr is just one of many dealers who find that the combination of a top quality product and Phillips service helps them make more sales and greater profits.



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FARM SERVICE DATA

Extension Station Reports

Corn profits and yields could be boosted considerably on many farms by increasing the number of stalks per acre and supplying sufficient fertilizer to feed the corn plants, Dr. Gordon J. Ryder, Ohio State University extension agronomist reports.

Dr. Ryder says corn yields went as high as 141 bu. per acre when the stalk population averaged 19,000 stalks on higher fertility soil in tests at the Ohio agricultural experiment farm.

He emphasizes that "you have to plant the seed if you want to get a good stand of corn." Inadequate corn stands, he says, are often due to a failure to drop enough kernels per acre.

Dr. Garth Volk, head of Ohio State University's agronomy department, also stresses the need for large stalk populations to make use of the plant nutrients in the soil. He figures that in Ohio, about 50% of the corn fields average fewer than 10,000 stalks per acre.

Tests indicate it is profitable for farmers to use row fertilization in addition to plow-down applications of plant food for corn, reports Dr. H. J. Mederski, of the university's agronomy staff. Corn responded well to row fertilization on silt loam soils that had previously received heavy bulk applications of fertilization, he says.

★

Fall is an ideal time to plug the gaps in a soil fertility program, reports Marshall Christy, University of Missouri extension soils specialist.

"Lime and fertilizer applied this fall can save the farmer time and labor next spring when every minute counts in the planting season," says Mr. Christy, in a statement summarized by the Midwest division of the National Plant Food Institute.

"Plant food applied now will be just right for plowing deep later this fall. The nutrients can be more useful to crops next season that fertilizer disked in next spring."

Mr. Christy points out that a fall-top-dressing adds to the life span of legume-grass mixtures. This can save the cost of completely reworking and reseeding permanent-type grasses and legumes. An annual top-dressing also can mean extra tonnages of hay, silage and pasture for lower-cost, higher-profit milk and meat production.

One big advantage of fall fertilization is that the ground is firmer and trucks and machinery have an easier time getting on to fields. There is less chance of damage to the soil from packing down by heavy equipment.

★

Adding extra organic matter to the soil increased crop yields, but only during the year it was applied, in recent experiments at the University of Minnesota's North Central Experiment Station at Grand Rapids, Minn.

These studies were reported by A. C. Caldwell, university soils scientist.

Dr. Caldwell said straw bedding and wood chip bedding were applied to research plots in 1956. That same year, the two treatments increased potato yields 31 and 25%, respectively. Yields that summer were even better when station workers also applied 60 lb. nitrogen per acre.

Last summer, however, there was no difference in yields of potatoes, oats or hay on the same plots where either kind of organic matter had been added in 1956, compared to plots that had received neither treatment.

Even on the first-year tests, Dr. Caldwell said, the yield increases occurred only with straw and chips which had been first used as livestock bedding. Adding wood chips not used as bedding made no increases in yields.

OSCAR & PAT

(Continued from page 14)

"do you remember that Andrew's corn had a lot of weeds in it? And the field corners were full of thistles that kept spreading into the corn?

"Do I? I remember you had a hard time selling him some weed spray for it. But you did, and Andrew was so pleased with the results. He said it showed you were right again, when the weeds got choked out."

Pat nodded. "Mrs. Peterson, do you know what the name of that weed killer is?"

The lean, tear faced woman shook her head. "N—no. I don't pay attention to those crazy names they have for farm chemicals nowadays."

Pat smiled. "The name of one of the weed killers is Amine 2,4-D. And the weed killer used for thistle areas and fence rows is Ester 2,4-D."

"Ester 2,4-D!" repeated Mrs. Peterson. "Ester—" she sobbed, "You don't suppose—?"

"Andrew told me that the Amine and Ester chemicals were just what he needed to control weeds. He was very happy about it. Maybe he was saying 'Ester' not 'Esther' like you thought."

A warm, hopeful smile broke across Mrs. Peterson's face. "Oh, if only you are right! I'm going home right now and ask Andrew."

"Don't ask him," Pat advised. "Just go home and be your natural self. If you have faith in a man you don't have to ask him questions. I know Andrew and so do you."

"That's right." Mrs. Peterson rose to her feet, a smile on her face.

"And I'm going to bake one of my 10-in. high special orange chiffon cakes for you, Mr. Pat, and one for you, Tillie, and— and one for him!" She pointed at Oscar.

Estimated annual average cash farm income of

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WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Perennial Ragweed

(Ambrosia psilostachya)

How to Identify

The plant stems stand erect, usually less than 20 inches tall, heavily branched, with alternate or opposite leaves. Stems are rather stout, branched, hairy and, when mature, become woody. Leaves are light green in color, and about three or four inches long, divided into numerous parts.

Characteristics of Ragweed

This weed reproduces by seed and underground rootstocks. It is found in waste places, pastures, meadows, and by roadsides. It resembles common ragweed in appearance, but has a perennial root and a shorter, less bushy stem.

Damage Done by Ragweed

The abundance of yellow pollen produced by the plant is a prime cause of hay fever in human beings. To anyone thus afflicted, all other of the plant's shortcomings are inconsequential. However, ragweed is an unsightly, persistent plant which infests meadows and pastures and tends to take over complete areas where it chokes out other more valuable vegetation. However, it is not troublesome in cultivated land.

Control of Ragweed

Fortunately, ragweed is susceptible to the action of 2,4-D, 2,4,5-T and other chemicals which have been successful in practically eradicating it from certain small areas. Community drives toward eliminating this hay fever-inducing plant from cities, towns and counties have been largely successful. Vacant lots in cities when sprayed with herbicides, cease to be public health menaces as far as ragweed is concerned.

Illustration of Ragweed furnished through the courtesy of the U.S. Department of Agriculture.

BULK BLENDING

(Continued from page 1)

mixtures. In addition, it often includes custom spreading.

The cost advantage to farmers of bulk blended fertilizer over bulk-cured conventional mixes varies from $8 to $12 a ton in Illinois, the survey found. In addition farmers used the spreading service offered by blenders to reduce the demand for their labor during peak working months. Farmers bought blended fertilizer and had it spread on their farms by a spreader truck for about the same price as conventionally mixed fertilizer cost them, without being spread, the report said.

Following is a summary of the publication:

The practice of bulk blending straight materials has expanded greatly in Illinois. Between 1947 and 1957 the number of bulk-blending plants has increased from none to 92. In 1956 bulk blenders distributed 26% of all straight materials consumed in Illinois.

Three types of plants are ordinarily constructed for bulk blending. These are: (1) horizontal-flow, (2) vertical-flow and (3) combined horizontal-vertical-flow. The horizontal-flow plants have initial investment costs of about $25,000; combined horizontal-vertical, $45,000; and vertical, $72,000. Land constitutes a small percentage of the total investment cost —about $1,500. In the horizontal and combined horizontal-vertical plants, the remainder of the investment cost is divided almost equally between buildings and equipment. In the vertical plants, equipment costs are considerably higher than building costs.

Horizontal-type plants have an hourly output capability of about 10 tons per hour; combined horizontal-vertical, 13 tons per hour; and vertical, 16 tons per hour. When an additional man is added to the enterprise, output is increased about 10% in horizontal and combined horizontal-vertical plants, and about 30% in vertical-type plants.

Variable costs, excluding the cost of straight materials (about $37 per ton), vary from about $1.15 per ton in horizontal-type plants to $1.40 in vertical-type plants. Adding an additional man to the enterprise increases the variable cost per ton by about 10¢. Increases in variable cost per ton are partly offset by decreased fixed costs per ton when an additional man is added to the enterprise to increase hourly output.

Blending plants charged an average of $2.85 per equivalent ton of 10-10-10 for blending materials. The margin between the purchase and retail price of straight materials amounted to $8.10 per equivalent ton. A total of $10.95 was available for paying the fixed and operating costs of the blending plant. With an 8-hour day and continuous operation, horizontal-flow plants had a break-even volume of about 780 tons and required about 9.5 days of operation to blend this volume; in combined horizontal-vertical plants, about 1,100 tons and 10 days; and in vertical plants, 1,500 tons and 9 to 12 days.

Storage requirements for the various blending plants depended on the daily output and intransit delivery times for raw materials. The ratio between potential daily output and storage capacity varied from 1:27 to 1:15 in the various plants, while a ratio of 1:10 was required to be sure no scheduling problems were encountered.

Spreading operations offered two sources of revenue to the bulk-blending enterprise: (1) revenue from the spreading charge, and (2) revenue from an expanded market area (increased blending volume). An average of $1.15 per acre is charged for spreading 300 lb. of fertilizer per acre, which means $7.75 revenue is received per ton to cover fixed and variable costs of spreading. Profitable expansion of the market area depended on the net effect of increased delivery costs per ton and decreased blending costs per ton. Spreader trucks can now be operated at a loss and still be profitable to the blending enterprise because of increased blending volumes.

The cost advantage to farmers of bulk-blended fertilizer over bulk-cured conventional mixes varied from $8 to $12 per ton. In addition, farmers used the spreading service offered by blenders to reduce the demand for their labor during peak working months. Farmers bought blended fertilizer and had it spread on their farms by a spreader truck for about the same price as conventionally mixed fertilizer cost them, without being spread.

Chemetron to Operate Northern Chemical Plant at Searsport

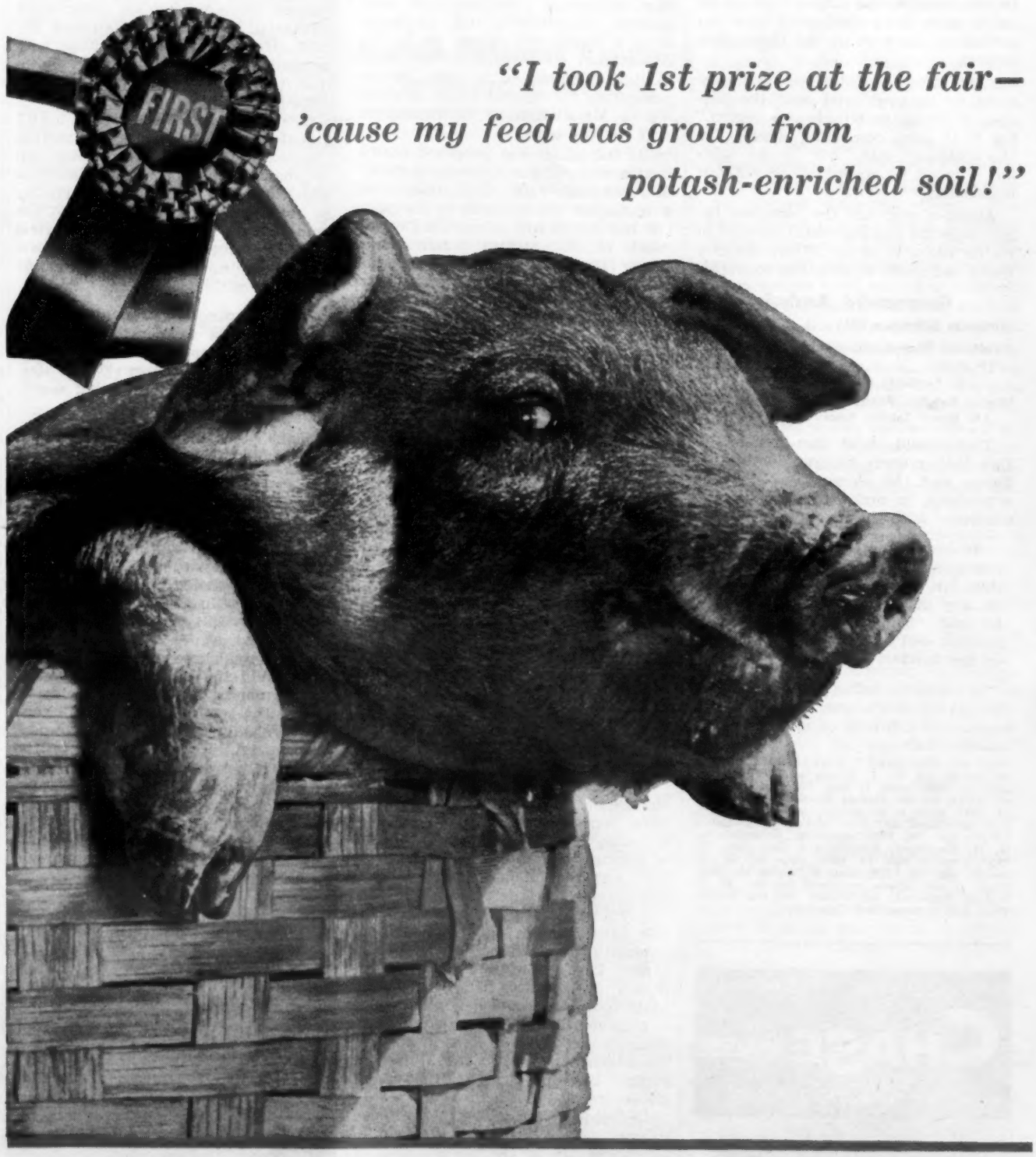
BALTIMORE—Northern Chemical Industries has contracted with Chemetron Corp. (formerly National Cylinder Gas Corp.) for Chemetron's Chemical Division to operate the N.C.I. ammonia plant and related facilities at Searsport, Maine, under a five-year lease, J. E. Totman, president of N.C.I., announced here recently.

Northern Chemical will act as sole distributor of the production and will continue to operate independently its original facilities producing superphosphate, sulphuric acid, liquid alum, sulphate of ammonia and sodium silicofluoride.

The Chemical Division is taking over most of the original Northern Chemical operating personnel. Fred L. Litty, vice president and general manager of N.C.I., will act as liaison officer between Chemetron and N.C.I. as well as continue to head up the local N.C.I. original operations. George Odom, formerly assistant general manager of N.C.I., will continue in similar capacity with Chemetron. Donald Fangmeyer, general sales manager of N.C.I., will be in charge of sales of all products produced at Searsport.

BUYS PART INTEREST

LEBANON, ORE.—A Silverton, Ore., man has purchased a part interest in the Valley Seed and Feed Store of this city. Charles Cross, who formerly operated a greenhouse and nursery at Silverton, has purchased the interest of Mrs. Jack Owens of Salem. Mr. Cross will be in partnership with his brother-in-law, Robert Heimerdinger, who with his mother, Mrs. Florence Heimerdinger and Mrs. Owens, have owned the concern since the death of the elder Mr. Heimerdinger.



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St. Paul Firm Gets Slight Reaction By Farmers on Guarantee Experiment

By JAMES L. ENGFER
Croplife Staff

(EDITOR'S NOTE: Late in 1956 and early in 1957, Croplife ran a series of pro and con articles about the proposal to change fertilizer ingredient expressions from the present N-P_2O_5-K_2O to the elemental N-P-K. Since then, the Minnesota Farm Bureau Service Co. of St. Paul has tried the method on its fertilizer bags as an aid to educating the farmers to the new system. The results of this trial and the outlook in the Midwest follow).*

ST. PAUL—An attempt by the Minnesota Farm Bureau Service Co. here to express fertilizer ingredients in elemental terms rather than on an oxide basis is meeting with little reaction on the part of the firm's customers.

"The success of the whole movement seems to depend upon the passage of fertilizer bills in our region," Dr. C. O. Rost, consulting chemist for the company, said, "but, in our opinion it could be accomplished without legislation."

About a year ago the company began printing the elemental content of its fertilizer in small letters directly under the oxide figures. For example:

Guaranteed Analysis

Minimum Nitrogen (N) 8.00%
Available Phosphoric Acid (P_2O_5) 16.00%
(As Available Phosphorus—P 7.0%)
Water Soluble Potash (K_2O) .. 16.00%
(As Water Soluble Potassium—K 13.0%)

This would show the present N-P_2O_5-K_2O system as the dominating figure and the elemental N-P-K as secondary, in order to acquaint the customer with the new symbols.

According to Dr. Rost, the system hasn't worked as well as hoped thus far. "At least, no one has asked any direct questions about it," he said. "But then, of course, we haven't sent out any questionnaires on the matter.

"It usually takes some time to change the status-quo," he said, "and because of the lack of understanding on the part of the farmer the educational process will be slow."

The Minnesota Farm Bureau Service's original plan was to start out with the elemental numbers small, as above, and the present numbers large, then transpose the size of the two numbers and finally do away with the old method altogether.

"We shall continue with the plan as long as control officials and college agronomists are urging the change," Dr. Rost said.

Perhaps the biggest factor in the future of the system lies in whether or not all the states in any specific region pass legislation making elemental expression of ingredients mandatory.

In Minnesota, R. E. Bergman, director of the Feed & Fertilizer Division, Minnesota Department of Agriculture, submitted a bill, patterned after a model bill drawn up by the Association of American Fertilizer Control Officials, to a state interim committee for further study. According to Mr. Bergman, the committee still has the bill.

"If the bill is not proposed at the next session of the state legislature," Mr. Bergman said, "I do believe an amendment will be made to the present bill which will allow the Department of Agriculture commissioner power to change the law if other states in the region make the change."

Dr. W. H. Pierre, head of department of agronomy, Iowa State College, said the Iowa legislature revised the state's fertilizer law at the last session, which met in 1957.

"The original draft of the revised Fertilizer Control Bill, which was introduced, provided for the change in expressing fertilizer ingredients from the oxide to the elemental basis. Because of opposition from some members of the fertilizer industry, however, this provision was removed," he said.

Opponents to the nationwide movement to change guarantees argued that:

1. Confusion would be created in the mind of the consumer by drastically lower numerical guarantees and higher prices.
2. Confusion would arise in the mind of the distributor, already burdened with many other problems.
3. Many problems would arise for the fertilizer manufacturer such as education with the consumer and distributor, pricing problems, problems of printing guarantees on bags, labels, tags and the like and raw material and manufacturing problems.
4. Problems would be created for the agronomists, text book writers, agricultural teachers and extension people because of new lists of approved grades, new lists of approved plant food ratios and new text books.

Arguments for the change have been itemized by Dr. Rost in an article which appeared in the Minnesota Farm Bureau Service Company's house organ, "The Indicator."

Dr. Rost said, "There are good arguments for changing to elemental P and K. It is the percentages of these elements which are important since they're the real plant foods. As a matter of fact, there is no P_2O_5 or K_2O in the fertilizer. The phosphorus exists as mono calcium phosphate, dicalcium phosphate, calcium meta phosphate or one of the ammonium phosphates. The potassium is in the form of potassium chloride or potassium sulfate.

"Putting the fertilizer analysis on the elemental basis would not only give the actual percentage of the plant food elements, but would simplify the problem of fitting a soil test to a fertilizer ratio and grade. The modern soil test shows the pounds per acre of available P and K.

"We believe that giving the fertilizer analysis in terms of percentages of plant food elements gives a truer picture of what is in the fertilizer bag. We feel confident that many manufacturers of fertilizer in the middle west will be following this procedure before long. If it were adopted, then there would be no need for legislation."

Purdue University's Agricultural Experiment Station also has given some answers to the opponents of the change.

Concerning the possible confusion that might arise, the station said, "In the early days of fertilizer usage, nitrogen content was expressed as NH_3 (ammonia), but this method was discarded many years ago. Prior to the change there was much anticipated confusion, misunderstanding and debate. However, most of those who remember the change, now agree that it occurred smoothly without the anticipated difficulties."

Continuing its discussion about manufacturers' problems, the station claimed that: "The new grades can be made from the same materials which are now being used commonly in fertilizer manufacture. Larger amounts of high-analysis materials will be necessary since the new grades contain a higher percentage of plant nutrients."

The Purdue experimenters said they thought farmers would purchase and apply about the same tonnage as at present. "In so doing, they will be purchasing more total plant food."

Some questions and answers about the problems which have been worked out by the experiment station follow:

Q. How much additional plant food will the farmers buy?

A. Based on data for the two major Indiana ratios, 1-1-1 and 1-4-4, which represented 83% of the total tons of fertilizer sold in the state during a recent year, an increase of 15,000 tons of P_2O_5 and 20,000 tons of K_2O might be expected.

Q. Will the cost of plant food to the farmer be increased?

A. The cost per unit of plant food will probably remain constant or decrease slightly since the trend on the elemental grades will be toward higher-analysis goods. This reduces transportation costs, sales costs and overhead per unit of plant food.

Q. Will the change to elemental guarantees add to present confusion in the meaning of fertilizer grades and ratios?

A. The change is toward simplification and, therefore, the new basis should be simpler to understand. This is especially true in the case of phosphorus. We guarantee phosphoric acid (P_2O_5) on a bag of fertilizer which contains neither phosphoric acid nor P_2O_5 as such. Phosphoric acid is a liquid. P_2O_5 is phosphorus pentoxide, not phosphoric acid. Similarly we guarantee potash (K_2O), but K_2O does not exist in fertilizers. Actually what is sold is mainly the salt, KCl. The effect of the change will be to leave this confusion behind.

Dr. C. O. Rost

Q. Will the change confuse the farmer?

A. Any farmer who now understands the meaning of grades and ratios already understands the relationship of the elements. The farmer who is now uninformed can learn the elemental relationship more easily than the present.

Q. Will the change diminish the usefulness of experiment station and extension publications which have been prepared on fertilizer studies over the many years?

A. Careful examination of these publications shows that much of the fundamental work has been expressed in terms of the elements. Popular and applied publications which tend more strongly toward expressions as the oxides are mostly subject to frequent revision and with few exceptions, will have undergone revision by 1960, irrespective of the change.

Q. Will the change result in smaller profits for the fertilizer industry?

A. It is recognized that the change will require some additional printing of fertilizer labels and of education material to be used in connection with sales. However, it is expected that these costs will be more than offset by the increased sales of plant nutrients as a result of the up-grading toward higher analysis.

*Oct. 29, 1956, page 1; Nov. 12, 1956, page 3, an article by W. F. Prince of Swift & Co.; Dec. 3, 1956, page 1; Dec. 31, 1956, page 4, an article by Dr. Vincent Sauchelli, NPFI; Jan. 14, 1957, page 6, an article by Samuel Nevins, vice president of Olin Mathieson Chemical Corp.; Jan. 14, 1957, page 22, an article by G. H. Kingsbury, Kingsbury & Co.; Feb. 11, 1957, page 1; Feb. 11, 1957, page 22, an editorial; Feb. 18, 1957, page 9; March 25, 1957, page 1, an article prepared by Dr. M. B. Russell, University of Illinois for the Middle West Soil Improvement Committee.

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Ray Whitcomb Elected President Of Pacific Northwest Association

PORTLAND, ORE. — Ray Whitcomb, Grandview, Wash., was elected president of the Pacific Northwest Plant Food Assn. at its annual convention held at Gearhart, Ore., Oct. 22-24. Karl Baur, Pacific Cooperatives, Portland, was elected vice president and Henning Waltersdorph, Magnolia Fertilizer Co., Seattle, was reelected treasurer. Leon S. Jackson was reelected secretary.

New directors elected were: R. J. Kenyon, Phillips Chemical Co., Spokane, Wash.; Glen Holt, U.S. Borax & Chemical Co., Portland; Alec Runciman, Webfoot Fertilizer Co., Portland; Harold Rud, J. R. Simplot Co., Salem. Hold-over directors include Elwood Lentz, Western Phosphates, Salt Lake City; Frank Meeker, Meeker Fertilizer Co., Salem; and M. G. Wolfkill, Shur-Crop Corp., Monroe, Wash. Frank Taylor, Oregon-Washington Fertilizer Co., Seattle, retiring president, automatically becomes a member of the board.

The convention this year for the first time included a symposium on liquid fertilizers, with one afternoon devoted to discussions by members of the industry.

The board of directors approved an Idaho soil testing project and appropriated $1,000 for this purpose. It also approved in principle an Oregon centennial farm for next year's centennial celebration. However, the Soil Improvement Committee was asked to furnish further details.

The convention, largest in the history of the association, closed with a banquet and dance.

In a speech by W. R. Allstetter, National Plant Food Institute, Washington, D.C., the results of a fertilization program in North Carolina were discussed.

About the Georgia project, Mr. Allstetter said, "Although final information on improved crops and increased farm income in the affected counties is not in, all concerned feel the results were spectacular. Soil samples from six counties increased in number from 2,200 in 1957 to 13,500 during the same period in 1958. Apparently, some of the publicity splashed over into other counties in Georgia as total samples in the state increased from about 21,000 to 45,000."

Preliminary reports, he said, indicate the following:

(a) Substantially more nitrogen in the form of both mixed fertilizer and nitrogen materials was used in the first seven months of 1958 than in 12 months of 1957 in the six affected counties.

(b) High potash fertilizer grades, badly needed in the six counties, were up 350% in seven months as compared to 12 months the year before.

(c) More recommended grades and less non-recommended grades of mixed fertilizer were used.

(d) Lime use was up substantially.

For the 1958-59 year, the program is being expanded to 25 additional counties in Georgia. The local workers will have a model of a successful operation to follow. Consequently, it is believed that the program can be carried out in 25 additional counties with a much less state level effort per county.

In the meantime, the NPFI is helping the University of Georgia to carry out a detailed before and after motivation survey. Its object is to find out how effective the various features of the six county program were. Early next year, we should have the results of this survey, estimates of the relative improvement in crops and farm income and comparisons of fertilizer and lime tonnage on an annual basis.

With this material as background, we will have an excellent picture of the impact of the program, which we already know as substantial.

Continuing with the North Carolina project, he said before the deadline date, four out of seven communities succeeded in collecting soil samples from 100% of the farms in their area. About 4,000 soil samples were collected from Hoke County.

The official results in terms of improved crops and improved farm income are not yet in. However, there are some spectacular unofficial estimates. Many Hoke County farmers have indicated satisfaction with the results. In the face of cuts in cotton and tobacco acreage in the county, fertilizer use in 1957-58 was up about 11½% as compared to the previous year. In North Carolina as a whole, it was down about 4% for the same period.

Several other counties in North Carolina are planning to carry out similar projects during the current year.

As to whether similar programs should be tried in the Pacific Northwest, Mr. Allstetter said, "I have no suggestions to make. I learned the hard way that a successful program in one area is not necessarily welcome in another part of the country. I particularly remember singing the praises of your Benedict Farm project to a group in the East, and unsuccessfully suggesting it be copied in that area. You are the best judges as to whether concentrated soil fertility programs could be successfully carried out in the Pacific Northwest.

"We have already learned a great deal from these two pilot projects, both as to procedures and effectiveness. Also, we have further strong evidence that the National Analysts' Survey, Farmers Attitudes Toward the Use of Fertilizer, was correct in showing the close connection between soil testing and fertilizer use. This close connection showed up in the National Analysts Report not only in the Southeast, but all across the country, including the Pacific Northwest.

"During this coming year, concentrated county wide soil testing campaigns will be carried out in a number of other states. We believe the results will be similar to those in North Carolina and Georgia."

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Final Report on Oregon Grasslands Demonstration Farm

GEARHART, ORE.—A final report on the Oregon Grasslands Demonstration Farm, for the past three years sponsored by the Pacific Northwest Plant Food Assn., was given at the annual convention at Gearhart, Ore., by Palmer Torvend, Washington County extension agent.

Mr. Torvend said accomplishments on the project included: Getting a group of 10 or 11 agricultural technicians to work together on one specific program with cooperation from all; a 330% increase in grain yields per acre, 200% increase in silage production with less land in production because of reseeding some of the acres to new pasture land, and an increase of 1,576 cow days pasture. This increase in production totals out to 52,269 more TDN's produced on the farm in 1958 over 1955. Converted, it means that it would take 10 TDN per cow day.

A few observations Mr. Torvend made were:

(1) This grassland demonstration farm has been the catalyst for encouraging many more farmers to make soil tests, to do a better job of irrigation, and to follow a more realistic fertilizer program. As a result of this program, there has been a stepped-up interest in the use of borated land plaster and potash through the county and in surrounding areas, a wiser use of nitrogen, and a renewed interest in the use of lime.

(2) It has served to provide business men, agriculture men and farmers with a farm-size demonstration of what a farmer can do when he applies the technical knowledge now at hand and when he is provided with adequate financing. It has served to focus attention of these groups on the importance of proper fertilization, good management, and the need for the farmer to pay more careful attention to scientific developments. In other words, it has served to point out the vast amount of information and assistance that is available and show the great possibilities of grassland agriculture."

Cotton Research Results To Be Heard at Meeting

FAYETTEVILLE, ARK. — The eighth annual Arkansas Plant Food Conference will be held Dec. 4-5 here at the University of Arkansas, according to Dr. John W. White, associate director of the agricultural experiment station.

Latest research results on cotton will be featured. Pasture and forage fertilization will also be discussed, stated Dr. L. F. Thompson, associate agronomist in charge of arrangements.

Dr. Robert Zahner of USDA southern forest experiment station, Crossett, Ark., will cover forest fertilization.

The conference, sponsored jointly by the agricultural experiment station and the agricultural extension service, is scheduled annually by the agronomy staffs of the two organizations for members of the fertilizer industry and all others engaged in or interested in soil fertility and improvement, Dr. Thompson added.

Dr. John Tyler Caldwell, president of the University of Arkansas, will speak at the annual banquet which will be held in the Student Union on the evening of Dec. 4.

New Fertilizer Plant To Start Operations in Spring

ELLENSBURG, WASH. — A new bulk handling fertilizer distribution plant is scheduled for operation here by next spring, according to Jim Mundy of the Mundy Fertilizer Co.

The new 60-ft. by 120-ft. building to house the bulk custom mixing and mechanical handling operations will be on land purchased from the city. The operation will mean expansion in services offered, Mr. Mundy said, because of the equipment being installed. A slight additional payroll increase is also contemplated.

George L. Pelton

HEADS SAFETY GROUP — George L. Pelton, Smith Agricultural Chemical Co., Columbus, Ohio, was elected chairman of the Fertilizer Section, National Safety Council, at the group's annual meeting in Chicago, Oct. 20-21. Mr. Pelton succeeds George F. Dietz, Fertilizer Manufacturers' Cooperative, Baltimore, Md. Other officers named at the meeting were Elmer Perrine, Nitrogen Division, Allied Chemical Corp., New York, vice chairman; and A. I. Raney, Phillips Chemical Corp., Bartlesville, Okla., secretary. Executive committee members were named as follows: W. C. Creel, North Carolina Department of Labor; Mr. Dietz; John S. Mark, Farm Bureau Cooperative Assn., Inc., Columbus, Ohio; Yen Shen, Taiwan Fertilizer Co., Taiwan, China; W. A. Stone, Wilson & Toomer Fertilizer Co., Jacksonville, Fla., and Mr. Pelton. The nomination committee was headed by E. O. Burroughs, Jr., F. S. Royster Guano Co., Norfolk, Va.

Disease Takes Heavy Grain Toll in Texas

PLAINVIEW, TEXAS—Diseases of small grains cost producers $15,471,000 in 1958, according to Harlan Smith, plant pathologist with the Texas agricultural extension service.

Rusts accounted for most of the loss, says Mr. Smith, while damage was also heavy from smuts and blights. A new disease called wheat stripe rust was troublesome for the first time in the area between Plainview and Lubbock.

While chemical control is still not perfected, Mr. Smith says farmers can cut the losses by seed treatment and crop rotation. Also a few small grain varieties have been developed which seem resistant to certain diseases.

Because of the high yield made in the state this year, these losses have been overlooked, said Mr. Smith.

SOUTHEASTERN CONFERENCE

(Continued from page 1)

the importance of soil testing as a guide to better fertility. He pointed out that in areas where a definite program is conducted to determine the soil's needs, farmers are willing to purchase and apply larger amounts of plant food and, in the process, realize more profit from their operations.

Moderator of the panel discussion was Dr. J. W. Fitts, head of the department of soils, North Carolina State College. He outlined the work being done in his state and introduced the panel members who in turn told about soil testing programs carried out in Scotland and Hoke counties, North Carolina.

The role of the county agent in the program was described by W. C. Williford, of Raeford, N.C.; that of the banker by Clyde L. Stutts; of the Chamber of Commerce, T. B. Upchurch; and of the fertilizer dealer, W. M. Campbell, Dixie Guano Co., Laurinburg, N.C.

In describing the activities in his county, Mr. Upchurch told about the intensive efforts expended by many groups to aid the farmer in improving his income. A complete survey was made, he said, and through the cooperation of numerous influential persons, the income of farmers in the county was increased by $1.5 million this year.

The farmers were able to pay off their bank notes, grew more corn, cotton, hogs and chickens than ever before, and in the process, consumed many additional tons of fertilizer materials. The farmers "perked up" he said, had their soils tested, and got behind the program upon seeing that it meant better income for them. The program is a continuing thing, the speaker reported, and will be conducted on an even larger scale next year.

Looking at the soil-testing program from the standpoint of the banker, Mr. Stutts reported that one notable feature of the project was the cooperation of so many persons. Everyone had some part to play in the program, he said, and as a result, Hoke County was able to "pass its big test."

Committees involved in the program sought 100% participation of farmers in the county and the farmers in turn were taught how to take their own soil samples for analyzing. Giving a strong assist in the program were the fertilizer dealers in the county who helped to keep the farmer reminded of the need for fertilizer in keeping with the soil's analysis.

Mr. Stutts reported that a "significant increase" in fertilizer use had been achieved since the program got under way. For each 100 lb. bag of mixed goods, he said, at least 1¼ lb. more of plant nutrients were included. Higher analysis goods are becoming the rule rather than the exception, it was explained.

Not only in higher plant food content, but also in the total tonnage of fertilizers, are gains being made. Mr. Stutts declared that the program had resulted in an increase of 14.7% in the number of tons of plant food consumed.

The important role of the fertilizer dealer in sparking a soil-testing and fertility program was discussed by Mr. Campbell. He said that through the dealers, farmers can keep well informed on what the program is about, and also keep posted on local conditions. Soil analyses and samples gave the growers a quite different picture of their soils' needs, he said, and as a result of such tests, a new willingness was shown to make more adequate purchases.

He said that salesmen calling on farmer-customers were urged to pick up soil samples and bring them back for analysis to maintain a closer check on the needs of the farms in the county.

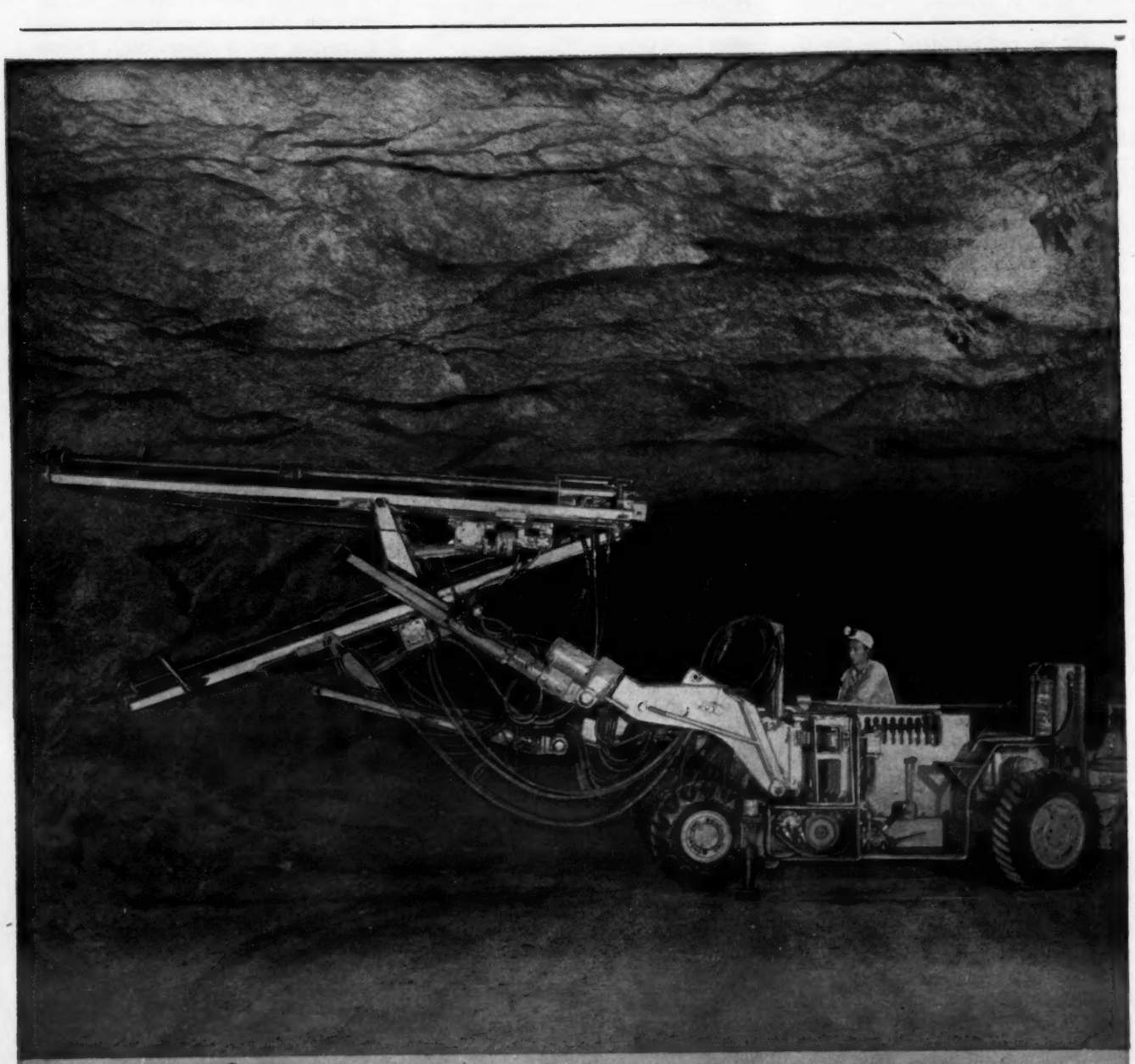
A number of necessary steps come into the picture, Mr. Campbell said. The dealer should constantly spread the word around the community about what the most successful farmers are doing, knowing that these leaders are well respected and their methods and procedures are followed closely by neighboring growers.

Local demonstrations are another important area of activity, the dealer observed. He said the question sometimes comes up as to who should furnish the materials for such demonstrations, but expressed the opinion that they should be used without indication of brand names, but only the grade. Fertilizer recommendation sheets should be available and well distributed for maximum results, he observed.

The matter of merchandising and its extreme importance to the fertilizer dealer was discussed at some length by F. E. Hartzler, merchandising specialist of Kansas State College, Emporia, Kansas. He emphasized and re-emphasized the fact that a person in business must know his costs, his merchandise, his potential, his customers and their needs.

Decisions as to best location of a business place are basic, he reminded, as is information on determining the size of the selling space and an idea of the potential so one may not waste selling space needlessly, nor on the other hand, to limit its possibilities. He said that anyone in the agricultural chemical business must know something about the operating averages of the trade . . . as a sort of par for the course. Many business owners do not know whether or not they are actually making a profit, he said, and declared that if a business merely "breaks even" it can survive a maximum of only five years.

The sad thing is, he stressed, that unless a firm maintains adequate records on costs and operating over-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head, the owner may think he is making progress where in reality he may be only breaking about even. The one thing that every business must do is to make a profit, he reminded. Figures are available on the margins of profit necessary to sustain business life, he told the audience, and added that such information is absolutely indispensable to the business man.

The question of how many times a salesman must call on a given prospect was brought up by the speaker. He said that not very often will a sale of fertilizer be made on one or two calls, but in order to sell a program, some five calls must be made, according to the averages.

Mr. Hartzler recalled the basic motivations which cause people to buy anything. In the case of fertilizer, he stated, the chemical analyses of different brands are practically identical and the differences must be in the way the materials are sold. Salesmen must remember that no farmer buys fertilizer merely to purchase something, but rather, to enable him to harvest a better crop, raise more corn to the acre than does his neighbor, and to make more of a profit. Therefore, the subconscious motivations of desire for masculinity, romance, adequacy, and the desire to live better are stronger than conscious reasoning when it comes to making purchases.

Committee meetings of the NPFI occupied much of the remainder of the two-day meeting. Groups discussed soil research, extension, and education at different sessions during the afternoon of Oct. 30 and the morning of Oct. 31.

Comprising the program committee were J. P. Champion, Jr., Albany Warehouse Co., Albany, Ga.; G. L. Dozier, Central Georgia Fertilizer Co., Macon, Ga.; Dr. Fitts; C. D. Hoover, head, department of agronomy, Mississippi State College, State College, Miss.; H. V. Miller, Armour Fertilizer Works, Atlanta, Ga.; H. T. Rogers, head, department of agronomy and soils, Alabama Polytechnic Institute, Auburn, Ala.; and Dr. S. L. Tisdale, Southern regional director of the National Plant Food Institute.

Rain Causes Brief Halt In Southern Harvesting

MEMPHIS—Mid-South farmers have their harvest operations in full swing after a brief interruption caused by rain. It was the first time in almost a month that rain had forced the farmers out of the fields.

Mississippi extension service officials report that cotton picking has been completed in the southern part of the state and that parts of the Delta have 70% of the crop in. Soybean harvesting is well under way with excellent yields of 40 to 50 bu. an acre reported in many areas. Corn harvesting is nearing completion. Officials say the late rains have damaged crop quality and that further rain will be especially damaging to cotton quality.

Extension spokesmen in Arkansas say another three or four weeks of good weather is needed before farmers finish their harvesting. Cotton harvesting is estimated at 30 to 75% complete, depending on the county. Soybean combining is well under way and the corn crop is almost harvested. With the exception of the Mississippi River Delta counties, most Arkansas farmers have completed the sowing of winter grains.

West Tennessee counties are far along with harvesting with most areas reporting good cotton and corn yields. H. T. Short, extension district agent at Jackson, says that while farmers have made good progress in harvesting cotton, corn and soybeans during the past couple of weeks, more good weather is needed.

With the corn and soybean harvests about completed in southeast Missouri, farmers in that area are turning their attention to cotton.

Study Set of Possible Potash Mine Damage From Atom Explosion

ALBUQUERQUE, N.M. — Atomic scientists have agreed to visit the International Minerals and Chemical Corp. mine near Carlsbad to see if there would be any possibility of damage to the mine resulting from a proposed underground atomic explosive test.

Dr. Gerald Johnson of the AEC's University of California Radiation Laboratory at Livermore, Cal., assured IMCC officials that he and a group from the AEC's Albuquerque Operations Office would inspect the mine in the near future. The request came from Carl Arend of Chicago, general manager of the Potash Division of IMCC.

The proposed experiment, called Project Gnome after mythical underground workers, calls for the explosion of an atomic device about 1,200 feet down in the potash beds of southeast New Mexico. The spot was chosen because of the known qualities of the geology—data gained from extensive oil and potash drilling—and the purity of the salt would give excellent information about underground effects of the blast. The test is part of Project Plowshare, the search for peaceful uses of atomic energy, and has been scheduled for 1959.

Mr. Arend and a number of Carlsbad businessmen were invited by the AEC to watch a similar underground blast last month at the Atomic Test Site, Nevada. Mr. Arend expressed concern lest Project Gnome damage his company's operations near Carlsbad. He pointed out that the floor of IMCC's mine covers an area of about three square miles and the space between the massive salt pillars which hold up the ceiling amounts to about 60%.

Dr. Johnson assured Potash Company representatives that the AEC intends to take no chances even if it means going somewhere else to make the tests. "We want you to be assured," Dr. Johnson said, "that we want to be certain there will be no damage or injury to anyone before we go ahead with the shot."

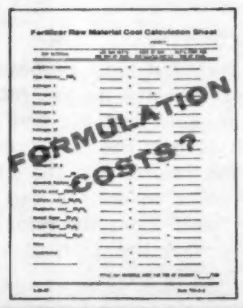
Mr. Arend asked if there was a possibility of the location being made into a permanent test site for future explosions if Project Gnome is successful. He was assured that only one blast is planned since the AEC is planning "other shots in a number of different media."

TO FERTILIZER DIVISION

NEW YORK—C. L. (Jack) Gemmell, formerly of the Jacksonville, Fla., office of Bradley & Baker, has transferred from the feed department to the fertilizer division of the firm, it was recently announced. His new headquarters will be in Florence, S.C.

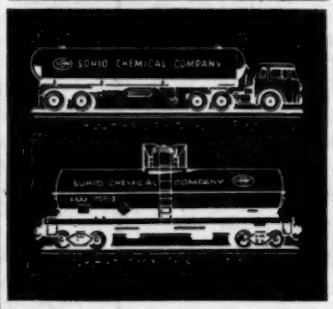
When you add up the answers . . .

GAUGE VAPOR PRESSURES?



SALTING OUT TEMPERATURES?

FIXED TO FREE RATIOS?



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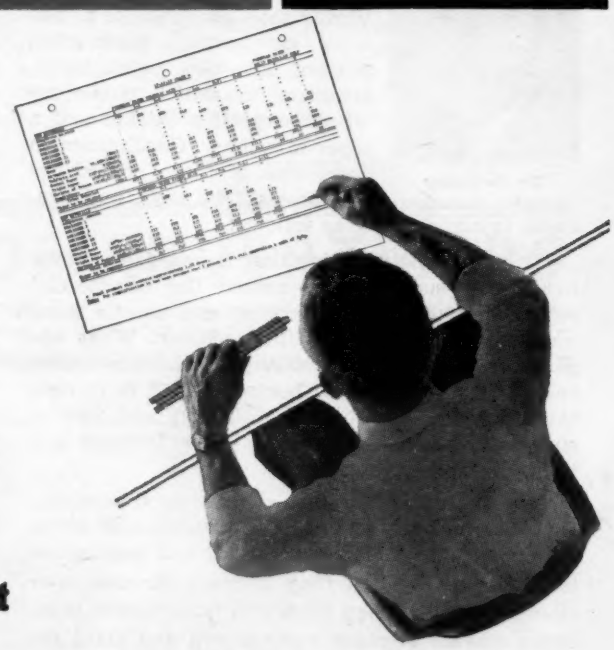
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The regional circulation of this issue is concentrated in the Midwestern states.

VIEWPOINT . . .

Commercial Agronomist a Combination of Scientist, Economist and Super-Salesman

By Dr. Malcolm H. McVickar

Chief Agronomist, California Spray-Chemical Corp. Richmond, Cal.

THE MAKEUP of a commercial agronomist, of which there are many in the fertilizer trade, has sometimes been a hazy picture in the minds of many who work with these men. Is he basically a scientist, scholar, philosopher, or perhaps a combination of all?

Dr. Malcolm H. McVickar, chief agronomist for California Spray-Chemical Corp., recently took a look at his own profession and jotted down some of the things he saw. His findings indicated that the successful commercial agronomist is a man of many callings: "a hybrid," as Dr. McVickar says. He must be a "top flight commercial agronomist, scholar, scientist, psychologist, inventor, economist, public relations expert, politician and a super-salesman. Capabilities in every one of these professions are 'musts'," he says, and proceeds to explain why as follows:

Dr. McVickar

It goes without saying that knowledge is paramount for success. This means the commercial agronomist must be a scholar and what's more important he must remain a scholar. What appears to be a fact today may prove fallacy tomorrow. The surest way to become stupid is to continue doing things the same old way and just as sure as day and night progress goes forward and the individual loses ground.

The successful agronomist must be a scientist. He must understand the basic principles of biology, physiology, chemistry, physics and mathematics, and visualize how they interact. He must constantly search for new basic and fundamental principles related to plant environment and plant responses. It's this basic knowledge that makes up the steps in the stairway of agricultural progress.

Most commercial agronomists work a great deal with other people. They must be able to understand how others react to new ideas, especially when a trade name product or expenses are involved. Knowing how to present ideas so that they are accepted necessitates an understanding of human behavior and motivations. In other words, what makes people resist changes and how resistance can be overcome. This suggests the use of applied psychology.

The productive agronomist is constantly "looking beyond the horizon." He is thinking of new ways to improve agriculture and to put his company in a good competitive position. His first concern is always that of the American farmer. Any practice must be a paying proposition for the grower but it must also be one that helps his company in one way or another. The recommended practice may not necessarily make money for the company directly, but if not it must have indirect benefits.

The commercial agronomist, therefore, must be able to find ways of making practices pay off. For example, this may mean new combinations of materials, the discovery of new products, or new uses made possible through new techniques of application. Many agronomists have provided specifications for new planters, applicators and harvesters. Products sometimes demand uniform application for maximum dollar pay-off. If a company has a potentially good material but there's no current satisfactory method of using the product, the agronomist will put on the hat of an inventor and will come up with a solution for getting the job done.

It's a fact that most people work to make money and farmers are no exception. Sure, they like farming as a way of life but farmers also must have cash to pay the taxes, buy new machinery, remodel the house, pay the bill for the son and daughter going to college and for that matter to keep the "wolf from the door." The sure way to put a new farming method into practice is by showing that it pays.

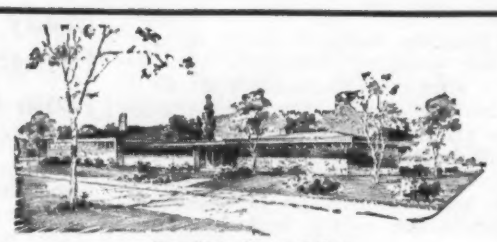
Farmers aren't interested in bushels, tons, bales, etc. They are interested in dollars and cents returns per unit of production. The commercial agronomist talks in terms of profits per unit, return on dollar and seldom in costs. He's interested in making the farmer money, not saving him money. This difference in attitude—to make money instead of saving money—is often the difference between the commercial agronomist and the agronomist connected with a public agency.

The commercial agronomist recognizes that his efforts will be much more fruitful if he sells his ideas to those who influence farmers. County agents have a tremendous influence on practices employed by farmers. Bankers and others who control credit also have a great deal to do with the adoption of new practices. Therefore, the commercial agronomist works hand in hand with these people who directly or indirectly influence farmers. This means he's a public relations expert. It may mean personal contacts, stories for magazines, production of movies, or the traveling of one of a million avenues all going toward the "City of Progress."

Yes, we might as well face the facts, when one works with people sooner or later politics enter the picture. The sound agronomist never compromises his position but he studies the situation and moves with the current when the stream is going in the right direction. He should be clever enough to get his ideas into effect without stirring up a hornets' nest.

Most commercial agronomists work closely with sales organizations. The hardest person to sell is a salesman. Thus the man that sells the salesman must be a super salesman. The best idea in the world will not contribute to a more profitable agriculture or to the company's profits unless it's put into use. The commercial agronomist fires up the sales force and once the flame is going he serves as a catalyst to keep it hot.

The job of the commercial agronomist is a rewarding one because the individual can see his actions contribute to agricultural progress. His work is truly that of a leader. To be successful he must possess knowledge, imagination, initiative. Yes, the successful commercial agronomist is that unusual individual, a scholar, scientist, psychologist, inventor, economist, public relations expert, politician and super salesman all wrapped up in one personality.



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MEETING MEMOS

Nov. 20—Rutgers' Annual Pesticide Dealers' Conference, Rutgers University Commons, George St., New Brunswick, N.J.

Dec. 4-5 — Southeastern Conference on Mineral Nutrition of Forest Trees, Duke University, Durham, N.C.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Bruce Poundstone, University of Kentucky, Lexington, Ky., secretary-treasurer.

Meeting Memos listed above are being listed in this department this week for the first time.

Nov. 11-13—New York State Insecticide and Fungicide Conference, 20th Annual Meeting; and 11th Annual Pesticide Application Equipment Conference, Bibbins Hall, Cornell University, Ithaca, N.Y.

Nov. 12-13—Oregon Weed Conference, seventh annual meeting, Sacajawea Hotel, LaGrande, Ore.

Nov. 12-13 — Chemical Market Research Assn., Fall Meeting, St. Paul Hotel, St. Paul, Minn.

Nov. 12-13—Oregon Weed Conference, annual meeting; La Grande, Ore.

Nov. 13-14—Farm Advisers Fertilizer Technology School, University of California, Riverside.

Nov. 13-14—Southwest Accident Prevention School for Fertilizer Plant Supervisory personnel, Sheraton-Terrace Motor Hotel, Austin, Texas.

Nov. 16-18—National Fertilizer Solutions Assn., Netherland Hilton Hotel, Cincinnati, M. F. Collie, 2217 Tribune Tower, Chicago, Executive Secretary.

Nov. 18—Arizona Agricultural Chemicals Assn., annual meeting, Westward Ho Hotel, Phoenix, Ariz.

Nov. 18-20—Washington State Weed Conference, Moses Lake, Wash.

Nov. 19-20—Carolinas-Virginia Pesticide Formulators' Assn., Carolina Hotel, Pinehurst, N.C.

Nov. 20-21—Two Day Joint Meeting, National Agricultural Chemicals Assn. and Commercial Chemical Development Assn., Lord Baltimore Hotel, Baltimore, Md.

Nov. 24-25—Entomological Society of America, Eastern Branch, Annual Meeting, Lord Baltimore Hotel, Baltimore.

Nov. 25—Eighth Semi-Annual Meeting and Winter Conference, Manufacturing Chemists' Assn., Hotel Statler, New York.

Dec. 1-4—Entomological Society of America, Annual Meeting, Hotel Utah, Salt Lake City.

Dec. 2-3—Far West Regional Accident Prevention School, Fresno, Cal.

Dec. 3-4—North Central Weed Control Conference, Netherland Hilton Hotel, Cincinnati.

Dec. 3-4—Annual Soil Fertility and Plant Nutrition Short Course, University of Missouri, College of Agriculture, Columbia, Mo.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 8—Annual Soils and Fertilizer Short Course, Coffey Hall, University of Minnesota Institute of Agriculture, St. Paul.

Dec. 8-10—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

1959

Jan. 7-8 — Fertilizer Short Course, Iowa State College, Ames.

Jan. 7-8—Fifth Annual Insect Control Conference, Mississippi State University, State College, Miss.

Jan. 7-9—Thirteenth Annual Northeastern Weed Control Conference, Hotel New Yorker, New York.

Jan. 20-22—California Weed Conference, Miramar Hotel, Santa Barbara, Cal.

Jan. 12-13—Ohio Pesticide Institute, annual winter meeting, Neil House, Columbus, Ohio. J. D. Wilson, Secretary, Agricultural Experiment Station, Wooster, Ohio.

Jan. 21-22—Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore.; George Kitzmiller, Pacific Cooperatives, Portland, conference chairman.

Jan. 21-23—Western Cooperative Spray Project, Benson and Imperial Hotels, Portland, Ore.

Jan. 22-24 — Agricultural Aircraft Assn., Senator Hotel, Sacramento, Cal.; Wanda Branstetter, Chandler Field, Fresno, Cal., Executive Secretary.

Jan. 28-29 — Illinois Custom Spray Operators' Training School, 11th annual meeting, University of Illinois, Urbana.

Jan. 29-30—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver. D. E. Garrison, Box 623, Greeley, Colo., secretary.

July 7-9 — Pacific Northwest Plant Food Assn., 10th Annual Regional Fertilizer Conerence, Tacoma, Wash.

CALENDAR FOR 1958-59

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Hoja Blanca Rice Disease Discovered in Mississippi

BATON ROUGE—Hoja Blanca, a disease of rice, and the insect carrier, Sogata Orizcola, which may cut rice yields as much as 75%, have been found recently in Bay St. Louis, Miss., reports Kirby Cockerham, specialist (entomology), with the Louisiana State University agricultural extension service. A joint survey by the LSU agricultural experiment station, the Louisiana State Department of Agriculture and the U.S. Department of Agriculture is in progress to determine whether this insect carrier is in Louisiana.

Hoja Blanca, according to Lewis Hill, assistant specialist (agronomy), means white leaf. The first symptoms are one or more white stripes on the leaf blade, or the entire leaf may be white, or the leaf may have a mottled white and green pattern. The diseased portions of the plants are reduced in height and have short heads. The hull shows a brownish discoloration and dries out rapidly. Sometimes the floral part of the plant is entirely absent. Consequently, heads of diseased plants contain very few or no grains. Infected plants are not killed by the disease.

Mr. Hill says reductions in yield of as much as 75% have been reported in Cuba and Venezuela. All the commercial varieties now being grown in Louisiana are susceptible to the disease.

The discovery of this disease and its carrier was made in small isolated rice plantings, most of which were planted in and around duck ponds to attract ducks. Dr. John Atkins of the USDA laboratory in Beaumont, Texas, reported the discovery.

This disease occurs in Cuba, Venezuela, Colombia, Panama and Costa Rica. It was first found in the United States in the Belle Glade area of Florida in 1957.

Hoja Blanca is transmitted by the insect. So far, only one species of insects has been identified as a carrier and the disease has been found only on rice.

New Distributor

CEDAR RAPIDS, IOWA — Truck Equipment Co., Peoria, Ill., is a new distributor for Highway Equipment Co., Cedar Rapids, the company announced. They will handle "New Leader" lime spreaders, combination lime and fertilizer spreaders, wide spread lime and fertilizer spreaders, and mobile blenders. Truck Equipment Co. serves three tiers of counties across Central Illinois. Address of the new distributor is 2021 S. Washington St., Peoria.

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